University of New Haven 1982-1984

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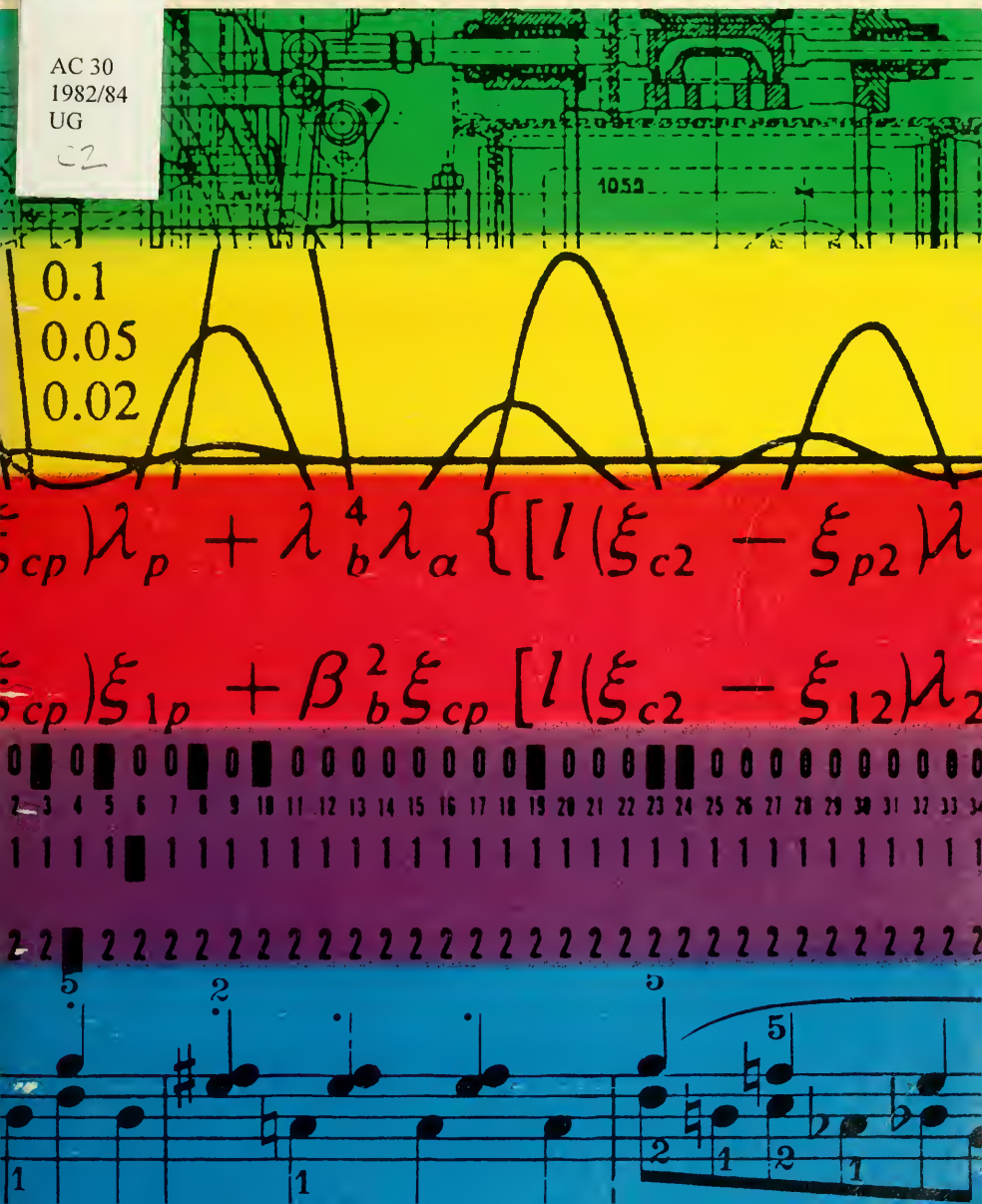

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Inquiries regarding affirmative action, equal opportunity and Title IX may be directed to the director of equal opportunity.

The university reserves the right, at any time, to make whatever changes may be deemed necessary in admission requirements, fees, charges, tuition, regulations and academic programs prior to the start of any class, term, semester, trimester or session.

Volume V, Number 5, February 1982

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Session B	May 19—June 16 Day Classes Only
Session C	May 20—July 6 Day and Evening Classes
Session D	June 10—July 15 Day and Evening Classes
Session E	June 17—July 15 Day Classes Only
Session F	July 13—August 26 Day and Evening Classes
Session G	July 19—August 13 Day Classes Only
Session H	July 19—August 19 Day and Evening Classes

1982-1983 Undergraduate Day Divison

Fall Semester 1982

August 1982	Tuition and Residence charge due	**Mon. 2**
	Orientation for new students	**Mon.-Tues. 30-31**
	Residence Hall opens for new students	**Sun. 29**
	Residence Hall opens for returning students	**Tues. 31**
September 1982	Classes begin	**Wed. 1**
	Last day to add day courses without late fee	**Thurs. 2**
	Holiday (Labor Day)	**Mon. 6**
	Last day for schedule revisions	**Wed. 8**
October 1982	Holiday (no classes scheduled)	**Mon. 11**
	Last day to petition for January graduation	**Fri. 15**
	Last day to drop courses	**Fri. 15**

November 1982	Holiday (Thanksgiving)	**Wed.-Fri. 24-26**
December 1982	Classes end	**Tues. 14**
	Reading day	**Wed. 15**
	Final examinations	**Thurs.-Wed. 16-22**
	Last day of semester	**Wed. 22**
	Residence hall closes	**Thurs. 23**
January 1983	Commencement	**Sun. 23**
	Spring Semester 1983	
January 1983	Tuition and Residence charge due	**Mon. 3**
	Residence hall opens for new students	**Tues. 18**
	Residence hall opens for returning students	**Wed. 19**
	Orientation for new students	**Wed. 19**
	Classes begin	**Thurs. 20**
	Last day to add day courses without late fee	**Fri. 21**
	Last day for schedule revisions	**Wed. 26**
February 1983	Holiday (President's Day)	**Mon. 21**
March 1983	Last day to petition for June graduation	**Tues. 1**
	Last day to drop courses	**Fri. 4**
	Spring recess	**Mon.-Fri. 14-18**
	Classes resume	**Mon. 21**
April 1983	Holiday (Good Friday)	**Fri. 1**
May 1983	Classes end	**Fri. 6**
	Reading days	**Sat.-Sun. 7-8**
	Final examinations	**Mon.-Sat. 9-14**
	Last day of semester	**Sat. 14**
	Residence hall closes	**Sun. 15**
June 1983	Commencement	**Sun. 5**

Division of Evening Studies

Fall Semester 1982

August 1982	Registration for current and former students	Mon.-Fri. 2-20
	Registration for new students	Tues.-Wed. 24-25
September 1982	Tuition due	Wed. 1
	Classes begin	Wed. 1
	Holiday (Labor Day)	Mon. 6
	Last day to add evening courses without late fee (except Monday courses)	Wed. 8
	Last day for schedule revisions	Mon. 13
October 1982	Holiday (no classes scheduled)	Mon. 11
	Last day to petition for January graduation	Fri. 15
	Last day to drop courses	Fri. 15
November 1982	Holiday (Thanksgiving)	Wed.-Sun. 24-28
December 1982	Classes end	Tues. 14
	Final Examinations	Wed.-Tues. 15-21
	Registration for current and former students	Mon.-Fri. 13-31
January 1983	Commencement	Sun. 23

Spring Semester 1983

January 1983	Registration for current and former students	Mon.-Fri. 3-7
	Registration for new students	Tues.-Wed. 11-12
	Tuition due	Thurs. 20
	Classes begin	Thurs. 20
	Last day to add evening courses without late fee	Wed. 26
	Last day for schedule revisions	Wed. 26
February 1983	Holiday (President's Day)	Mon. 21
March 1983	Last day to petition for June graduation	Tues. 1
	Last day to drop courses	Fri. 4
	Spring recess	Sun.-Sun. 13-20
	Classes resume	Mon. 21
April 1983	Holiday (Easter)	Fri.-Sun 1-3
May 1983	Classes end	Fri. 6
	Final Examinations	Sat.-Fri. 7-13
June 1983	Commencement	Sun. 5

Graduate School

June 1982	Fall term deadline for receipt of completed application and supporting materials*	**Tues. 1**
	Commencement	**Sun. 6**
July 1982	Summer term begins, one seven-week term	**Mon. 12**
August 1982	Classes end for summer term	**Thurs. 26**
	Last day to register for fall term	**Fri. 27**
September 1982	Classes begin	**Sat. 11**
	Holiday (no classes scheduled)	**Sat. 18**
	Last day to add a class, before second class meeting	**Thurs. 23**
	Holiday (no classes scheduled)	**Mon. 27**
October 1982	Winter term deadline for receipt of completed application and supporting materials*	**Fri. 1**
	Holiday (Columbus Day) Monday classes meet Fri., Oct. 15	**Mon. 11**
	Last day to file petition for January graduation	**Fri. 15**
November 1982	Holiday (Thanksgiving)	**Tues. 23-Sat. 27**
December 1982	Last day to register for winter term	**Fri. 17**
	Classes end for fall term	**Sat. 18**
January 1983	Spring term deadline for receipt of completed application and supporting materials*	**Sat. 1**
	Classes begin	**Mon. 3**
	Commencement	**Sun. 23**
	Last day to add a class, before the second class meeting	**Mon. 17**
February 1983	Holiday (President's Day) Monday classes meet Fri., Feb. 25	**Mon. 21**
March 1983	Last day to petition for June graduation	**Tues. 1**
	Last day to register for spring term	**Fri. 25**
April 1983	Classes end for winter term	**Sat. 2**
	Classes begin for spring term	**Wed. 6**
	Last day to add a class, before the second class meeting	**Tues. 19**
May 1983	Holiday (Memorial Day) Monday classes meet Friday, June 3	**Mon. 30**
June 1983	Fall term deadline for receipt of completed application and supporting materials*	**Wed. 1**
	Commencement	**Sun. 5**

July 1983	Holiday (Independence Day), Monday Classes meet Friday, July 1	Mon. 4
	Classes end for spring term	Tues. 5
	Summer term begins, one seven-week term	Mon. 11
August 1983	Classes end for summer term	Thurs. 25
	Last day to register for fall term	Fri. 26
September 1983	Classes begin for fall term	Sat. 10
	Holiday (no classes scheduled)	Sat. 17
	Last day to add a class, before the second class meeting	Mon. 19
October 1983	Winter term deadline for receipt of completed application and supporting materials*	Sat. 1
	Holiday (no classes scheduled)	Mon. 10
	Last day to petition for January graduation	Fri. 14
November 1983	Holiday (Thanksgiving)	Tues. 22-Sat. 26
December 1983	Last day to register for winter term	Fri. 16
	Classes end for fall term	Sat. 17
January 1984	Spring term deadline for receipt of completed application and supporting materials*	Sun. 1
	Classes begin for winter term	Mon. 2
	Commencement	Sun. 22
	Last day to add a class, before the second class meeting	Mon. 16
February 1984	Holiday (President's Day), Monday classes meet Friday, Feb. 24	Mon. 20
March 1984	Last day to petition for June graduation	Thurs. 1
	Last day to register for spring term	Fri. 23
	Classes end for winter term	Sat. 31
April 1984	Classes begin for spring term	Wed. 4
	Last day to add a class, before the second class meeting	Tues. 17
May 1984	Holiday (Memorial Day), Monday classes meet Friday, June 1	Mon. 28
June 1984	Commencement	Sun. 3
July 1984	Classes end for spring term	Tues. 3

*Prospective students who complete their application after the deadline may register for one term as non-matriculated in-process students. This registration does not guarantee acceptance.

*International students are not eligible for in-process registration because of immigration requirements and should submit completed applications and all supporting materials well in advance of these deadlines.

THE UNIVERSITY

The University of New Haven is a private, urban, coeducational university with a contemporary and innovative view of higher education.

The undergraduate programs here are designed to meet the needs of today's students by offering them the professional training they will need for careers in a highly competitive job market.

The university gives equal emphasis to offering its students a liberal, humanistic education and to providing professional programs in business, engineering, computer science and other advanced technical programs.

The university also is flexible enough to meet the needs of students who work while they attend school at UNH. The Evening Studies Division offers a complete range of programs at night, and a new Cooperative Education Program makes it possible for students to alternate semesters of class attendance and class-related work experience.

By responding to the educational needs of our students, the University of New Haven has become a major regional university that serves both our students and the business community.

History

The University of New Haven was founded in 1920 as the New Haven YMCA Junior College, a branch of Northeastern University. The college became New Haven College in 1926 by an act of the Connecticut General Assembly. For nearly 40 years, the college held classes in space rented from Yale University.

In September 1958, the college completed construction of a classroom building on Cold Spring Street, New Haven, for its daytime engineering building. That same year, the college received its first authorization from the Connecticut legislature to offer the bachelor of science degree in the fields of business accounting, management and industrial engineering.

But though its student body on the new Cold Spring Street campus numbered fewer than 200 persons, the college's facilities were fast becoming overcrowded. To meet the needs of the college and the local community, the Board of Governors purchased, in 1960, the three buildings and 25 acres of land in West Haven that formerly belonged to the New Haven County Orphanage.

The combination of greatly increased classroom space and the four-year degree program sparked a period of tremendous growth in enrollment and facilities. In 1961, the year after the college moved to West Haven, the graduating class numbered 75. Twenty years later, the figure had climbed to more than 1,100.

New Haven College received full accreditation of its baccalaureate programs from the New England Association of Schools and Colleges in 1966. In 1969, the college took a major step forward with the addition of the Graduate School. Initially offering programs in business administration and industrial engineering, the Graduate School expanded rapidly. Today, 25 programs and additional courses have pushed graduate enrollment to more than 2,400.

On the fiftieth anniversary of the founding of the college, in 1970, New Haven College became the University of New Haven, reflecting the increased scope and the diversity of academic programs offered.

Today, the university's enrollment in graduate and undergraduate degree programs exceeds 7,500, and the university's non-credit and professional programs serve another 2,500 students. The university offers more than 100 graduate and undergraduate degree programs in five schools: The Graduate School and the Schools of Arts and Sciences,

the School of Business, the School of Engineering and the School of Professional Studies and Continuing Education.

Undergraduate courses and programs are offered in West Haven on the main campus as well as in Madison and the Groton/New London area. Graduate courses and programs are offered in West Haven and in Danbury, Madison, Waterbury, Middletown, Trumbull, Stamford, Groton/New London and downtown New Haven.

Philosophy

The basic assumptions and goals that have governed and continue to govern the academic programs and life of the university are four:

- the belief that there is value and virtue in a general education to help students acquire an understanding of society and the place of the individual within it,
- a conviction that the hallmark of an educated person is a critical mind in the sense of a capacity to test and challenge previous assumptions and new ideas,
- a strong commitment to the principle that in a complex and technological society a university cannot be insensitive to the need of its students for professional training which will enable them to obtain rewarding and productive employment, and
- that a higher education must provide students with a breadth of knowledge and a sensitivity to weigh ethical and moral issues and form values and life goals.

Other assumptions and considerations governing the academic programs and activities of the university have been:

- the need for students to participate in work and service activities which provide contacts with other aspects of society and in using skills and exercising judgment and responsibility in a variety of settings outside the university community.
- the importance of allowing full play and scope to the creative abilities and intellectual curiosity of students through opportunities to pursue independent study and investigation.
- the importance of recognizing the educational interest of students geared toward specific professions and careers as students seek to adjust to changing labor market conditions, and the preparation of students for graduate and professional training beyond the baccalaureate.

Accreditation

The University of New Haven is a coeducational, nonsectarian, independent institution of higher learning chartered by the General Assembly of the State of Connecticut.

The University of New Haven is fully accredited by the New England Association of Schools and Colleges, which accredits schools and colleges in the six New England states. Membership in the association indicates that the institution has been carefully evaluated and found to meet standards agreed upon by qualified educators.

The university holds membership in the American Council on Education, the Association of American Colleges, the National Association of Independent Colleges and Universities, the Accreditation Board for Engineering and Technology, the Criminal Justice Accreditation Council, the American Dietetics Association, the College Entrance Examination Board and is a member of other regional and national professional organizations.

Individual programs, departments and schools hold various forms of national professional accreditations that are listed under relevant sections of the catalog.

Facilities

The university's 56-acre campus contains 14 buildings that offer students modern laboratory and library facilities, the latest in computer technology and equipment, and a new athletic complex.

Located in West Haven, about 10 minutes from downtown New Haven, the main campus includes the administration and classroom facilities, the Graduate School, the Engineering and Sciences Building, the Computer Center, the Marvin K. Peterson Library, the residence hall, the Student Center and bookstore, the Psychology Building, and a new multi-purpose classroom building.

The south campus includes the School of Business and the Student Services and Admissions Building, while the north campus is the site of the university's athletic fields and gymnasium.

The Classroom Building

Construction on the university's new multi-purpose classroom building is expected to be completed in fall, 1982. The four-story building contains more than 20 laboratories and classrooms, a 300-seat auditorium/theatre, an art gallery, and special facilities for students in forensic science, biology, photography, and theatre.

The Marvin K. Peterson Library.

Marvin K. Peterson Library

The Marvin K. Peterson Library, named in honor of the former president of the university, was opened in 1974. It has a capacity of 300,000 bound volumes. Adjoining the Main Building, it includes special collection rooms, a music room, archives and spacious reading and reference areas. Study is made convenient by modern research facilities and equipment including microreading stations and microform reader-printers.

The library contains approximately 300,000 volumes. It is also a depository for 75,000 U.S. government documents. The library subscribes to over 1,000 periodicals and extensive back issue files are maintained.

The resources of both the New Haven and West Haven public libraries are available to students (nonresidents must pay a fee). Under a reciprocal arrangement, University of New Haven students may borrow materials from the libraries of Albertus Magnus College or Quinnipiac College by presenting a valid identity card.

Computer Center

The University Computer Center provides a state-of-the-art facility to both academic and administrative functions at the University. It maintains four independent processing units, each accessible from any given terminal via a network processor capable of polling for ports, both direct-connect or dial-up.

Further, two of the CPU's are networked together via ZODIAC (a Data General network support system). The center also supports six micro computers: 1) three Radio Shack TRS-80's (Level II), 2) two Apple II's (one with a graphics tablet), and 3) an ATARI.

Two ot the processing units mentioned above are dedicated to administrative work only. They support both batch streams and time sharing through a total of 62 ports (48 active), as well as the capacity for RJE stations on or off campus. The main memory capacity of each system is 128K bytes. The peripherals attached to the central processing units are four disk drives (with dual porting capabilities), each drive representing approximately 200 megabytes of on-line storage, three mag tape drives, three 600 line per minute printers, two 1000 card per minute readers, one 400 card per minute punch unit and one floppy disk unit.

All data entry is made via remote terminal stations from various campus responsibility centers including admissions, the registrar's office, the business office, etc. Terminal access is both hard-wired and dial-up types. Terminals are hard-copy and video display tubes. The central processing units operate under DNA's TSO with spooling and features the CYTOS-II Editor (a modified version of CYTOS developed at Yale for the IBM-360).

The academic facility's primary computers are the Data General MV/8000 and the S-140. Both are the Eclipse line. The MV/8000 is a 32 bit processor with three megabytes of real main memory and a virtual address range of four gigabytes. The CPU runs at 1.1 million instructions

per second. The system has floating point hardware and functions in a multiprogramming/multitasking environment. The operating system is AOS/VS and is capable of handling 255 concurrent processes. Peripherals attached to the system are three disk drives (277 megabytes each), one 800/1600 BPI tape drive, one 600 line per minute printer, one 340 character per second printer, and one 180 character per second printer and one 180 character per second Decwriter printer. Several more printers can be attached if desired.

The system can support up to 128 terminals, and presently is utilizing 75 video-display-tubes. A full screen editor dramatically enhances program generation and throughput. All programming is interactive via the VDTs. Programs can be submitted to a batch stream if desired. This allows for continued use of terminals for other tasks while a batch is running.

Communications capabilities are superb in that networking (including such protocols as SNA, X.25, etc.) is or can readily be made available to academic users.

Software support includes ANSI languages such as COBOL, FORTRAN 77, PL/1, RPG-II, BASIC (Extended), PASCAL, APL, etc. A database manager (INFOS), a SORT/MERGE package, a mathematical/statistical package (IMSL) are all readily available for users. The social science package, SPSS—Version 9.0 is up and running. Many other popular software packages will be made available as time allows. Graphics packages and Raster Graphics terminals also can be supported by the system and soon will be introduced into the computing curricula. Several RJE emulators are supported on the MV/8000, including RJE 80 (2780/3780) and HASP II. Word-processing is also up and running.

The Data General S-140 is used to drive a MEGATEK Vector Refresh Graphics unit. The MEGATEK has a 4096 x 4096 screen and supports KB entry, JOY-STICK, Light-pen and tablet input. The Graphics processor includes hard-wired 3-D, Rotational/translation features and all are activated through FORTRAN Callable Routines. The S-140 is a 16 bit processor, has a ½ megabyte main memory and supports up to 5 terminals with all active at present. Other peripherals are a tape drive, 24 megabyte hard disk and a floppy disk—all DG compatible. The operating system is AOS and will be able to communicate with the MV/8000 through ZODIAC, hence allowing the S-140 to make use of 32 bit compilers on the MV/8000.

The 6 microcomputers support BASIC, in general; some support FORTRAN 77 and PASCAL; the Atari supports a Music Composer, as well as the delightful game cartridges. All micros can become intelligent terminals to the networked systems. A Decwriter printer (180 cps) is mechanically switch-controlled and is available to any one of the micros.

From the collection of the National Art Museum of Sport.

Athletic Complex

The university's north campus houses the gymnasium, with seating for 1,500 at sporting events, a fully equipped weight room, racquetball court, and steam room.

On the adjacent grounds are six tennis courts, baseball and softball diamonds, and the Robert B. Dodds Field, a combination football, lacrosse and soccer field.

The National Art Museum of Sport

The National Art Museum of Sport was founded in 1959 and, since 1979 has been located in the university's Marvin K. Peterson Library. More than 100 paintings, sculptures, drawings and prints are on display in the library, which is generally credited to be America's largest and most diversified assemblage of sports art.

Schools of the University

School of Arts and Sciences

The School of Arts and Sciences offers associate degree programs in eight academic fields and bachelor's degrees in 23 fields from art to world music. The school's certificate programs offer specialized instruction in such fields as journalism and advertising design to students interested in a concentrated exposure to one subject area.

Through the Graduate School, the School of Arts and Sciences also offers master's degree programs in community psychology, environmental science, gerontology, the humanities, legal studies, and organizational/industrial psychology as well as a senior professional certificate in applications of psychology. Detailed information on the graduate programs is available in the Graduate School catalog.

School of Business

The School of Business includes the Division of Accountancy and the Division of Criminal Justice. It offers bachelor of science degrees in 24 fields, associate degrees in seven areas such as hotel management and retailing, and a number of certificate programs.

The Graduate School programs offered by the School of Business include those leading to the master of business administration, the master of public administration, the master of science and the executive master of business administration degrees as well as a number of business-related senior professional certificates.

School of Engineering

The School of Engineering offers bachelor of science degree programs in seven fields: chemistry, civil engineering, computer technology, electrical engineering, industrial engineering, materials technology, and mechanical engineering.

Master of science degree programs are offered through the Graduate School in seven engineering fields: computer and information science, electrical engineering, environmental engineering, industrial engineering, mechanical engineering, operations research and the combined masters degree in business administration and industrial engineering. Graduate students also may select a senior professional certificate in computer and information systems. Students may consult the Graduate School catalog for more details.

The Graduate School.

School of Professional Studies and Continuing Education

The School of Professional Studies and Continuing Education offers programs leading to the associate in science degree and the bachelor of science degree as well as part-time credit and non-credit courses both on and off campus. The school has five distinct units:

The Division of Evening Studies, Summer Sessions and Winter Intersessions

A wide variety of undergraduate courses are offered in evening sessions during the fall and spring semesters. Summer day and evening courses are offered during four, five and seven-week sessions. During the winter intersession in January, innovative and conventional intensive courses are offered mornings or afternoons. All the offerings in this division are credit courses leading to certificates or to associate and bachelor's degrees.

Professional Studies

Professional studies offers associate in science degree programs in aeronautical technology, occupational safety and health, fire and occupational safety and shipbuilding and marine technology. Bachelor's degree programs are offered in fire science administration, arson investigation with a minor in criminal justice, fire science technology and occupational safety and health.

Special Studies and Professional Development

This division offers a variety of non-credit certificate courses in both specialized and general areas of study as well as intensive seminars, workshops and institutes.

Co-op Programs

Cooperative education, Co-op for short, is a unique five-year program that enables a student to combine practical work experience with his or her college education. While earning a bachelor's degree, a salary will be earned working in a field related to the student's major.

UNH in Southeastern Connecticut

UNH in Southeastern Connecticut is a division that offers programs at various locations in the Groton-New London area.

Graduate School

The Graduate School began in 1969 and offers master's degrees in 25 programs at eight locations throughout Connecticut.

The main campus in West Haven offers all academic programs. The off-campus centers at Waterbury, Danbury, Stamford, Madison, Middletown, and Groton offer courses leading to master's degrees in business administration, computer and information science, and other programs.

The Graduate School schedules its courses to meet the needs of working professionals and operates on a trimester calendar. Most courses are scheduled during the late afternoon, early evening, and on Saturday.

Those who wish additional information about the Graduate School should write to the Graduate Admissions Office to request a copy of the Graduate School catalog. Those interested in off-campus offerings should call Elaine Lewis, Associate Director of Graduate Admissions (Extension 316) or, for the Groton-New London area, Dr. Robert DeMichiell at 449-8518.

Degrees Offered by the University

The University of New Haven offers programs leading to the bachelor of arts degree, the bachelor of science degree, the associate in science degree and a number of certificate programs.

Graduate Degrees

Through the UNH Graduate School, programs are offered leading to the master of arts degree, the master of science degree, the master of public administration, the master of business administration, the executive master of business administration and a number of senior professional certificates.

Bachelor's Degrees

The bachelor's degree programs generally require 120 credit hours of study and take four years for full-time day students. Many other University of New Haven students take advantage of the full range of courses offered in the evening and complete their undergraduate degree on a schedule that complements their own careers.

Associate Degrees

The associate degree program is designed to encourage students to begin their college education even though they do not yet want to commit themselves to a full, four-year course of study. Sixty or more credit hours are required for the associate degree, and the credits earned may later apply toward the student's bachelor's degree.

Certificate Programs

Students can take their first step toward an undergraduate degree by registering for one of the certificates offered by the university.

Each certificate program is carefully designed as a concentrated introduction to a particular subject area and generally consists of courses totaling 15 to 30 credit hours.

Later, students may choose to apply the credits they have earned toward their undergraduate degree at the university.

KKP

STUDENT LIFE

Dr. Thomas B. Robinson, dean of student affairs and services

Being a student at the university of New Haven is being a part of the New Haven community—a city noted for its music, theater, art galleries, and much more.

Musical entertainment ranges from year-round performances of the New Haven Symphony to rock concerts at the New Haven Coliseum to local bands at many downtown clubs. Professional theatre thrives in New Haven at Long Wharf Theater, the Yale Repertory Company and at the nearby American Shakespeare Theater in Stratford, Conn. Some of the region's outstanding art collections can be seen on the Yale University campus.

On weekends, the Connecticut shore, Cape Cod, the ski slopes of Vermont and New Hampshire, and New York City are just a car or bus ride away.

Activities On Campus

On campus, students can attend a variety of events including political debates, lectures by a variety of well-known public figures, rock and folk music concerts, student theatrical presentations, and much more.

Clubs and Organizations

Almost 40 university student clubs and societies are open to interested students. Included are student chapters of professional societies, religious organizations, social groups and special interest clubs.

Councils

Separate day, evening and graduate student councils have the responsibility for initiating, organizing and carrying through extracurricular activities and for liaison between students and the university staff.

The Day Student Government is a forum where undergraduate students can provide input to the administration in order to improve all aspects of undergraduate education at the university. The council schedules a number of extracurricular activities, and all students are encouraged to participate.

Cultural Activities

There are student organizations formed around interests in literature, art, film and drama. These groups sponsor visiting artists and lecturers, publish materials and generally provide a well-rounded cultural program for University of New Haven students.

Fraternities and Sororities

National and local service, social and honorary fraternities and sororities are active on campus. They sponsor programs such as the semi-annual bloodmobile and other services as well as social functions.

Publications

Student publications include *The News*, the university student newspaper; *The Chariot*, the annual yearbook; and *The Noiseless Spider*, a literary publication. Students may volunteer their services on any of the student publications.

Social Activities

The social calendar is filled with varied events to appeal to all students: mixers, concerts, films, free parties to climax each semester, cabaret and Homecoming.

Alumni Office

Patricia A. Ahern, director

Membership in the Alumni Association is acquired immediately upon graduation. All degree graduates become members automatically. Including the class of 1981, there are almost 14,000 members of the Alumni Association. The alumni director, with the assistance of the Alumni Association president, conducts the affairs of the association during the period between board meetings, which occur four times per year.

As a member of the Alumni Association, graduates receive an alumni card which enables them to use the university library, gymnasium facilities, services of the Career Development Office, admission to home athletic contests, and access to a special alumni low tuition audit program. *Insight*, an all-college publication, is mailed to all alumni ten times per year. Homecoming, an annual event in October, and other educational and social events are open to all alumni. Alumni volunteers play an important role in the Annual Giving Campaign. Each fall the Association sponsors a Phonathon in which all alumni nationwide are contacted for pledges.

The Alumni Association is represented on the Board of Governors by a member who is elected to a term of two years. The president of the association serves on the Board of Governors as an ex-officio member.

Members of the Alumni Board are elected to a two-year term. The council, numbering approximately 30 people, is an advisory board to the university on alumni relations. The primary objectives are to strengthen alumni relations and to promote communication between the alumni and the university as a whole. Members of the council are chosen by the board for a one-, two- or three-year term. Anyone interested in joining the council should contact the Alumni Office.

Campus Store

Jerome Jeromsky, manager

The university's campus store provides all necessary texts, new and used, that are required for courses at the university. It also carries related supplies, greeting cards, imprinted clothing, gifts, candy and a selection of paperbacks, newspapers and periodicals. The campus store buys back used texts on a daily basis throughout the year. It also orders class rings and handles film processing for the campus community.

Special arrangements are made for students taking courses at off-campus locations to purchase required books at or near off-campus centers.

Athletics

William M. Leete, Jr., athletic director

Recognizing the importance of a broad range of physical and emotional outlets to a well-balanced college experience, the University of New Haven seeks to involve the student on various levels of active participation in games and sports, as well as to provide an opportunity for community and student support for its varsity intercollegiate program.

14 Varsity Sports

During the fall, varsity soccer, football, cross country, baseball and women's tennis and volleyball are offered. In the winter, men's and women's basketball, ice hockey and track are the main attractions. During the spring, baseball, tennis, lacrosse, outdoor track and women's softball keep UNH's athletic fields busy.

Highlighting the 1980-81 athletic season at the university, was the appearance of five teams in post-season play.

Coach Debbie Chin's volleyball team had a 24-17 won-lost record and qualified for its second EAIAW Regional in the last three years.

The cross country team under coach Jack Maloney ran in the Northeast Regionals at Indiana University of Pennsylvania and finished 19th out of 32, while first-year coach Linda Hamm took the women's basketball team to the championship round of the State Division II tournament before bowing to Quinnipiac College, 71-70. The women cagers won a school record 16 games while losing 12.

In the spring, baseball coach Frank Vieira's squad qualified for a fifth consecutive NCAA Division II Northeast Regional and concluded play with a 26-9 record. Sprinter Otto Pearson represented UNH at the Division II nationals, in Macomb, Ill., where he competed in the 400-meter run.

Also having outstanding years were the soccer team which was 11-2-4 and narrowly missed qualifying for the regionals; the football team under head coach Tom Bell had a 6-3-1 record and second-place finish in the New England Football Conference after winning the title and going 8-0-1 in 1979, and the basketball team under first-year coach Stu Grove produced a winner when the team finished play with a 15-11 mark.

The athletic department coaching staff welcomes all interested candidates and invites active involvement in and support of its athletic programs.

The University of New Haven is a member of the Eastern College Athletic Conference, the National Collegiate Athletic Association, the New England College Basketball League, the Eastern Association of Intercollegiate Athletics for Women, and the Association of Intercollegiate Athletics for Women. Its teams have participated in many regional and national post-season tournaments.

Intramural Programs

The intramural department sponsors tournaments and competition for interested players in touch football, three and five man basketball, foul shooting, handball, softball, racquetball, tennis, floor hockey and volleyball. Interested students should check the North Campus bulletin boards for the dates and times of intramural contests.

Athletic Facilities

The North Campus consists of Robert B. Dodds Field, a new multi-purpose football-soccer-lacrosse field completed in the Fall of 1980, six tennis courts, a softball field, one baseball diamond, and an intramural field.

The gymnasium consists of two full-size basketball courts, a weight-training room, a steam room, a gymnastics area, a racquetball court and locker and shower areas for students and faculty.

A valid university ID card is required for entrance to the North Campus gymnasium or tennis courts during non-class or free play hours. The gymnasium will open for free play at times when regularly scheduled games and classes are not in progress. Students should take care to secure their lockers or leave properly identified valuables with the equipment manager when using any facility.

While members of the university's athletic teams are covered under an appropriate insurance policy, students who participate in intramurals and free play are not covered by such a policy and participate at their own risk. The university recommends that students who plan to use any North Campus facility for physical activity carry an appropriate insurance policy to cover medical costs in case of an injury.

Physical Education Courses

The Department of Physical Education schedules courses in golf, ballet, slimnastics, sailing, badminton, bowling, tennis, karate, lifesaving, volleyball, racquetball, handball, aerobic dance, jogging, soccer, softball, basketball and exercise/yoga.

Students with interests in activities not currently offered by either the athletic or physical education departments are encouraged to discuss these interests with department personnel. If sufficient interest is generated, these activities may be offered as part of the regular curriculum.

Career Development Office

Charles Bove, director

This office has two primary functions within the university: career advising and providing information about off-campus employment. It is located at the ground level below the campus store.

Career Development

To assist students in making career choices, individual counseling is available and is supplemented by other resources. Special workshops on resumé preparation, interviewing skills and job research techniques are scheduled in both the fall and spring semesters. For those students with questions as to what career direction is most reasonable to pursue, a monthly professional career testing service is available.

In addition, the office maintains an extensive library of career information, vocational resources, brochures and annual reports on specific employers.

Student Employment

While the office is not an employment service, listings of both full- and part-time positions are maintained to provide a common meeting ground for employers and prospective employees. Undergraduate and graduate students will find this useful both in locating part-time and full-time employment while in school, as well as employment following graduation. Alumni seeking positions are encouraged to use the services of the office.

Employers wishing to list positions with the Off-Campus Employment Office need only call or write, giving a description of the position available and other details. There is never any fee charged for this service.

Job Placement for Graduates

During each academic year, employer representatives visit the campus to interview graduating University of New Haven students, both graduate and undergraduate. In addition, representatives of a number of graduate schools visit to interview seniors interested in pursuing graduate education.

Students at all stages of their education and alumni are urged to make use of the office's resources in formulating career plans.

Publications

The Career Development Office regularly publishes the career development section of the university newspaper, *Insight*, and circulates the monthly campus recruiting letter. These publications appear during the first week of every month during the academic year and are also included with the alumni news. Information such as career development events, workshops, seminars, recruitment visits, employment outlook for graduates, job listings, job search hints, etc., are included.

The *Recruitment Schedule* will be mailed to any member of the university community who wishes it and provides the office with a supply of stamped, self-addressed envelopes for the number of months desired.

Counseling Center

Dr. George Davis, director

Individual counseling is offered to students for personal problems, for marital and domestic problems and for study and career choice problems. Students can obtain assistance for educational, vocational and general life problems.

A student who does not know where to go for help should contact the Counseling Center for information and direction.

The Counseling Center also offers psychological testing including vocational interest, personality assessment and academic placement. Students who are unsure of their academic skills, eventual career choice or life goals may request help in these areas.

As a service to first-semester seniors and members of the community who are planning to apply to graduate schools, a controlled testing center is maintained on campus. Arrangements may be made with the center for administration of the Miller Analogies Test and the forwarding of the score to the graduate school of the applicant's choice. All students wishing to take the Miller Analogies Test should contact the Counseling Center.

Developmental Studies Program

Dr. Nancyanne Rabianski, director

The Developmental Studies Program is designed to strengthen the basic skills of entering students. Courses within the program are taught by members of the faculty of the Mathematics Department and the English Department.

The English Department offers three developmental courses: Reading Strategies, E 101; English Fundamentals, E 103; and Speech, E 114. The three courses offer students a comprehensive study of the basic reading, writing and speaking skills necessary in using our language effectively. Fundamentals of Mathematics, M 103, is taught by the Mathematics Department.

Placement in these courses is determined by examinations given by the respective departments. Such placement becomes a first priority for affected students because the university believes such students can become successful college students only upon correction of skill deficiencies.

Please note these special provisions concerning E 101, E 103 and M 103. E 101 is a non-credit course. E 103 and M 103 carry three college credits and cannot be applied toward students' degree programs. They usually meet for up to six hours per week to provide intensive additional help. However, with grades of A or B in E 103 and permission of the English department, students may substitute E 103 for E 105 Composition and move directly into E 110 Composition and Literature.

Complete descriptions of the developmental courses appear in this bulletin as part of the course offerings of the Mathematics Department and the English Department.

Employment

See Career Development Office

Handicapped Services

George A Schaefer, coordinator

The Office of Handicapped Services provides guidance and assistance to students with various handicapping conditions. The office also coordinates the university's compliance with section 504 of the H.E.W. Rehabilitation Act of 1973 and other governmental regulations. All inquiries and problems concerning barrier-free access to university facilities should be addressed to this office.

Health Center

Patricia Garrett, head university nurse

The University Health Center is open to all university students without charge. Located on the first floor of the dormitory, the center is staffed with nurses and an internist. Services available include first aid and examinations for injury and disease. The center is also a resource for information on medical questions and other medical facilities available in the community.

One part of the medical program is the weekly women's clinic which takes place at the health center with nurse practitioners from the Yale Nursing School.

Full-time students are required to complete a medical questionnaire or obtain a physician's examination before entering the university. This record is essential to medical care at the time of injury or illness, and it helps in providing personalized recommendations about preventive medical care and health maintenance.

Health insurance is available through the university and is mandatory for those students who are not covered under family plans.

Housing and Meal Plans

John Schaetzl, assistant dean of student affairs

University Housing

Gary Reho, director

The university offers several housing options for undergraduate students. The university dormitory located on campus provides double

bedrooms arranged in groups of six around a common living room and bath. The building includes a large lounge and laundry. The university provides single rooms at a university supervised floor of the New Haven YMCA. Residence at the YMCA includes full use of Y athletic facilities including the pool, weight room, and racquetball courts. Cooking is not allowed at the dorm or YMCA and all student residents must purchase a university meal plan. Apartment-style living is offered at a university operated apartment complex near campus. In each apartment four students share two bedrooms, a living room, and kitchen. Students must provide their own furniture at the apartment complex.

Each university housing program includes resident staff and an active council of student residents who assure an atmosphere conducive for study and social activities. All university housing is rented on an academic year basis. Students who are permanent residents of New Haven County may apply for housing only with the special permission of the housing director.

All students are welcome to use the listing of off-campus housing maintained in the housing office. Because of the limited number of off-campus rooms available in the immediate area, the university is unable to guarantee off-campus accommodations. While university staff will be happy to discuss and advise students undertaking a lease with an off-campus landlord, the university cannot take responsibility for that lease. Students are responsible for any contract undertaken for housing and should carefully consider the nature of that contract and the responsibilities incurred.

The university dormitory.

University Dining

Carol Kleeman, director

The student center includes three separate student dining areas, Mary's Place, a snack bar, and the Rathskeller are located on the main floor. A full menu dining commons and meal plan dining room are located on the ground floor. Three meal plan options are offered; a plan, while highly recommended for all students, is required for students living in the dormitory and YMCA. Meal plan contracts are available by contacting the Housing office.

Learning Assistance Center

Dr. Nancyanne Rabianski, director

The Learning Assistance Center, Room M 108, offers a tutoring service open to all students on campus, not just those in academic difficulty. The staff of instructors and student tutors provides individual tutoring in a variety of subjects such as mathematics, writing and computer science. All tutoring is free and no appointment is necessary. Daytime and evening hours are posted in the Center. During the 1980-81 academic year, the Learning Assistance Center provided approximately 3,000 tutoring sessions to undergraduate students ranging from freshmen to seniors.

International Students

Robert J. Chudy, director

The university is fortunate in having many countries represented in its student body. The director of international student affairs provides special guidance when needed. The International Students Association at the university sponsors many activities and trips. In addition, the International Center of New Haven, located near the Yale campus, welcomes all foreign students to the many programs they sponsor and to full use of their facilities.

Minority Student Affairs

Melba Lee-Hanna, coordinator

The assistant to the dean and coordinator of minority affairs assists students, faculty and administrators in planning and implementing educational programs and workshops to aid minority students in making a smooth adjustment to the university's cultural and academic demands.

Programs include lectures, a black studies minor and panel discus-

sions on career opportunities. The workshops consist of small, experiential group sessions focusing on positive self-concept, leadership development and college survival skills.

The minority affairs office also serves as a liaison in building a supportive network between the community at large and the university. While the office has a special interest in minority issues, all students are encouraged to take advantage of the varied services offered by the minority affairs office.

Student Center

Rebecca Johnson, director

The Student Center provides a focal point for all student activities. Offering lounges, student offices, a game room, a large cafeteria and a snack bar, the facility has been designed to serve as a center for the student's non-academic college interests.

The Rathskeller, also located in the Student Center, opens daily at 4 p.m. serving draft beer and snacks. Live entertainment is often presented in the Rathskeller on the weekends.

Veterans' Affairs

George A. Schaefer, coordinator

Since the university has one of the largest veteran enrollments in Connecticut, an Office of Veterans' Affairs with a full-time staff is maintained. The Veterans Administration has assigned to the university a V.A. representative who maintains liaison directly with state and national V.A. benefits, the campus Veterans' Office provides a wide range of supportive services for veterans attending the university. Assistance is available in academic areas, and special help such as funding for tutorial assistance, readers for the blind and aid for the disabled is also available.

WNHU Radio

Rose Majestic, general manager

WNHU, the university's student-operated FM stereo broadcast facility, operates throughout the year on a frequency of 88.7 MHz at a power of 1,700 watts. This extracurricular activity, open to all university students, whether undergraduate or graduate, serves southern Connecticut with the best in music, news and community affairs programming. Its sportscasters are the voice of University of New Haven Charger sports teams. The WNHU broadcast day consists of locally produced shows. However, selected Intercollegiate Broadcasting System and National Public Radio features are also presented.

All WNHU activities in programming, business and engineering operations are performed by students in the university's day, evening and graduate division. The station will train all qualified students in their respective areas of interest.

Women's Affairs

Rebecca Johnson, coordinator

Several women staff members, with the help of interested students, coordinate a variety of non-academic programs of special interest to women.

Among the programs that have originated through the office are the Women's Health Center, women's studies course offerings and group meetings of returning adult women.

Personal counseling is available at any time. The director of the student center and the assistant director of the counseling center serve as contact persons.

ADMISSION AND REGISTRATION

The University of New Haven welcomes applications from men and women from all races, economic levels, religions and geographic areas.

Students wishing to take any course in the university, whether or not they seek a degree, must first satisfy the admission requirements and follow the admission procedures specified below. In general, all applicants must have graduated from an accredited secondary school or passed the state high school equivalency examination to be considered for admission.

Students should note that the different schools of the university may have additional admission requirements which are discussed in detail in subsequent pages of this catalog.

You become a student of the University of New Haven only after you have completed the steps listed below under Admission Procedure, completed all financial aid arrangements, selected and registered for courses for your first semester, and made the appropriate tuition and fee payments.

Admission Procedure Day Division

1. Write or telephone the university for information or to arrange for an interview. Telephone (area code 203) 934-6321, ext. 211 or 212.
2. Secure an application form from the Admission Office of the university or from your high school guidance counselor.
3. Submit the completed form with the nonrefundable application fee.
4. Request your secondary school and/or college to forward an official copy of your academic transcript directly to the Admission Office. If you are currently attending an educational institution and you will be sending us an incomplete transcript, it is your responsibility to send us your final transcript as soon as it becomes available.
5. Arrange for results of Scholastic Aptitude Tests (S.A.T.) or American College Testing Program (A.C.T.) examinations to be sent directly to the Admission Office, or arrange to take the University of New Haven tests.
6. Make preliminary contact with the director of financial aid to discuss possible financial assistance. The application for financial aid has no bearing whatsoever on whether or not a student is accepted to the university.
7. A decision on your application will not be made until we receive: your completed application, your non-refundable application fee, your high school and college (if applicable) transcripts, and your admission test scores.

Admission Procedure Evening Division

The procedure for admission to the Evening Studies Division is very similar. It is handled through the Office of the Division of Evening Studies and can often be accomplished in one visit. See the Division of Evening Studies section of this publication for more detailed information.

Freshmen Placement

Freshmen are placed in courses in English and mathematics according to their individual abilities as demonstrated through the university testing program, S.A.T. scores and high school records.

Some introductory mathematics and English courses include placement tests during the first week of school to insure that students have been placed in courses consistent with their abilities.

Some students may be placed in courses designed to upgrade their skills in particular subject areas and prepare them for more advanced courses at the university.

Conditional Admission

There are a limited number of openings in the day division of the university for students who appear to have potential for success that has not been demonstrated. At the discretion of the dean of admission, such students may be granted conditional admission to the university.

Some students may be required to take certain courses designed to strengthen their foundation in basic skills and prepare them for regular college courses. See the developmental studies program on page 23 for more information.

Academic Credit

Academic credit is granted on a credit hour basis. In addition to successfully completing regular courses, students may earn credit by taking independent study, crediting exams or CLEP exams, by receiving advanced placement, by taking coordinated courses at other institutions, or by transferring previously awarded credit from other institutions. These methods are detailed below or in the Academic Regulations section.

Advanced Placement

The university recognizes the program of advanced placement available to talented high school students operated by the College Entrance Examination Board. Students satisfactorily completing advanced placement courses in high school and the final examination prepared by the Educational Testing Service (E.T.S.) may be given appropriate college credit if their courses are similar to those offered at the University of New Haven.

E.T.S. Advanced Placement examinations are graded from 1 to 5. Credit is allowed where the grade earned is 3, 4 or 5. Students desiring to submit advanced placement courses for college credit should have all results of these courses and tests sent in with their application to the Admission Office.

The University of New Haven accepts credit by examination from the College Level Examination Program (CLEP). The passing percentile for CLEP and subject examinations is 50. Credit will be evaluated by each department chairman.

Transfer of Credit to the University

Students may transfer to the university after completing academic work at other institutions. Applications should be made to the dean of admission. If feasible, potential transfer students should visit the university and discuss their transfer credit situation with the chairman or dean administering the curriculum of interest. Normally, the university accepts only credit from regionally or nationally accredited colleges on an equivalency basis.

Students transferring from another institution must possess at least a 2.00 quality point ratio based on a four point scale. Credit is normally granted only for those courses completed with at least a grade of C, or its equivalent. Credit transferred from a two-year institution is generally limited to 60 credit hours, unless otherwise approved in writing by the dean of the school in which students seeks to enroll.

Final decisions on transfer credit are made by department chairmen and must conform to school and university policies. Credit is not officially awarded until the student has completed at least 12 credits in good standing at UNH. Potential students may be required to take qualifying or placement examinations for specific courses.

Plans of study for a University of New Haven degree should be agreed upon by both the transfer student and the department early in the first term of attendance in order to avoid course duplication and academic discontinuity.

Crediting Examinations

A student who has independent knowledge of the content of an undergraduate course offered by the university may, with the approval of the respective department chairman and dean, take a special crediting examination in lieu of taking the course.

Students are reminded that they must earn at least 30 semester hours through regular course work if they are to meet the residency requirements for graduation.

Students may not take crediting examinations during the first or last semesters in which they are enrolled.

Registration

Registration is the process of selecting classes each term. Registration includes faculty advising, a preliminary choice of classes (pre-registration), and fee payment. Final registration is not completed without these steps.

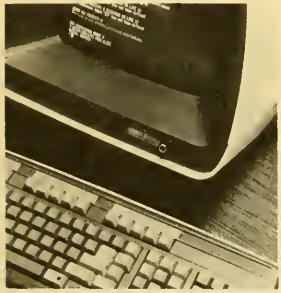
Students have assigned faculty advisors who provide guidance on academic matters and help the students with the registration process. Normally, the advisor is the chairperson or coordinator of the student's major course of study or another faculty member designated by the chairman.

There are two parts to registration: the completion of the registration forms and the payment of tuition. There is a penalty fee for delaying either of these two processes beyond the end of the registration period.

Registration dates and procedures for currently enrolled day students will be posted in advance. New students will receive registration procedures by mail. New students must register in person. A separate registration is required for each of the semesters, for summer sessions and for the winter intersession.

Social Security numbers will be used on student records; students should be sure to bring their number when registering. Prospective students who do not have a Social Security number should apply for one before registration. Students from other countries who do not have Social Security numbers will be given a temporary number by the university; however, they are encouraged to apply for a Social Security number as soon as possible.

Students are urged to plan their programs carefully before completing the registration forms in order to avoid the need for requesting changes. Once the registration is completed, students are charged the Change of Registration fee for each change made. The fee is payable upon completion of the form requesting the change.



Please Note: No new student will be permitted to register for classes until:

1. The nonrefundable Acceptance Fee has been paid.
2. Tutition **in full** for the semester has been received. Students relying on financial aid to cover all or part of a semester's expenses must present evidence of the amount of money awarded must be presented.

Course Overload Restriction

Students may not register for more than 15 semester hours in any one semester without written permission from their advisor and approval of their department chairman unless their work sheet specifically requires them to take more hours.

In most instances, students will be required to achieve a cumulative quality point ratio of 3.2 in order to register for more than 15 semester hours in any given semester.

TUITION, FEES AND EXPENSES

The tuition and other expenses listed in this section reflect the charges for the 1981-82 academic year. The tuition charges for the 1982-83 and 1983-84 academic years are expected to be higher than the charges listed in this section.

Day Division students taking courses offered during the evening will still pay the Day Division tuition rate for the first 18 credits per semester. Evening Division students may take one course offered during the day at the Evening Division tuition rate.

Undergraduate Day Division 1981-82

Application Fee $15

Payable with student's application to the university.

Acceptance Fee $50

Payable by all new students (incoming freshmen, transfer and former students) upon notification of acceptance, not refundable.

Tuition, 1981-82, Full-time Students	**Per Semester**	**Per Year**
Full time students taking 12-18 credit hours.	$2,010	$4,020
Students taking less than 12 credit hours, tuition per credit hour, $134.		
Students taking 19 or more credit hours, additional tuition for each credit hour over 18, $94.		
Student Activity Fee	50	100
Total tuition and fees	**$2,060**	**$4,120**

Note: The Student Activity Fee is distributed by the Day Student Government and covers the cost of student-supported services such as the newspaper and radio station and helps defray the expenses of clubs, organizations, social activities, etc.

Registration Late Fee $25

Late Payment Fees

Assessed for failure to complete payment of tuition, meal plan or residence charge by due date listed on academic calendar in this catalog. $30

Additional fee for failure to complete payment of tuition, meal plan or resident charges by the first day of classes. $15

Additional fee of 1½ percent per month on the unpaid balance after the first day of classes.

The Administration Building.

Undergraduate Evening Division 1981-82

Application Fee

Payable with the student's application to the university, not refundable. $10

Tuition, 1981-82

Evening students taking up to 11 credit hours, per credit hour. $94

Tuition Late Fee
Fifty percent of the tuition for Evening Division students is due when they register, the other 50 percent due by the first day of class. After this, the student must pay 1½ percent per month on the unpaid balance. $10

Tuition for Summer and Winter Intersession 1982
All students, both day and evening pay per credit hour for summer and winter intersession courses. $94

Tuition, UNH in Southeastern Connecticut, 1981-82
Students at UNH in Southeastern Connecticut are part of the Evening Division and pay per credit hour. $94

Other Fees

Change of Registration Fee
Assessed for each course or section addition after the completion of registration. $5

Laboratory Fees
Payable each semester by students registering for courses requiring the laboratory fee as listed in the bulletin. Non-refundable fees are announced in printed course schedules in advance of each semester.

Computer Use Fee
A fee will be charged for computer use to students who are not enrolled in a computer laboratory course.

Make-up Test
Assessed when a student is permitted to make up an announced test. $7

Make-up Examination
Assessed when a student is permitted to take an end-of semester examination at a time other than the scheduled time, except for conflicts caused by the examination schedule. $10

Co-op Program
Students participating in the university's Cooperative Education Program pay a continuing registration fee for semesters during which they work. $75

Crediting Exam
Assessed when a student is permitted to take crediting examination. $75

Auditing a Course
Students pay the same tuition and fees for auditing a course as they pay when the course is taken for credit.

Graduation
Assessed regardless of participation in exercises; no reduction will be made for nonattendance. For graduation in June, the fee and graduation petition are due no later than March 1 of the year of graduation; for January commencement, the fee and graduation petition are due before October 15 of the prior calendar year. Failure to meet the deadline date will result in a late charge of $25 in addition to the normal graduation fee, to be paid if there is sufficient time to process the graduation petition. If processing is not possible, graduation will be postponed to the next award date. $35

Transcript of Academic Work
No charge for first copy; thereafter, per copy. $2

Payments

Tuition, fees and other charges are payable when due. Checks or money orders should be made payable to the University of New Haven. There is a penalty charge of $7 per check for all checks returned by the payor's bank.

As a convenience to those who desire to spread their payments out over the period of a semester, a deferred payment bank loan plan is available to full-time students and to part-time students carrying six or more semester hours or the equivalent. Details and forms for this plan are available at the Business Office.

Application for this plan must be made prior to the first day of each semester.

The university withholds all issuance of grades, the awarding of diplomas, the issuance of transcripts, and the granting of honorable dismissal to any student whose account is in arrears.

Refund of Tuition

Any student under the age of 18 must have the written consent of a parent or guardian to withdraw from the university with an indication to whom any refund, if applicable, is to be paid.

Tuition is refunded or cancelled according to the scale below upon receipt of formal withdrawal request before the end of the fourth week of a semester.

1st	Week — 80%
2nd	Week — 60%
3rd	Week — 40%
4th	Week — 20%
After the 4th	Week — 0%

A prorated credit toward the following semester or refund may be awarded, subject to the decision of the Committee on Withdrawals, in situations involving the death or protracted illness of a student, involuntary induction into military service, other clearly extenuating circumstances, or in the case of part-time students, transfer or change of work initiated by employer that precludes meeting class schedules.

All request for refunds must be made in writing before the close of the semester ot withdrawal, and must include necessary documentation. The university assumes no responsibility beyond the foregoing for withdrawal occasioned by the pressures of family life or occupation.

Summer School and Intersession

In cases of withdrawal from a course or courses within the first week of each term, a refund of 50 percent of tuition is made. There is no refund of summer or intersession tuition after the first week.

The foregoing policy is intended to protect the university, since the university plans its expenses and bases its budget upon full collection of tuition and fees from all registered students, and assumes the obligation of supplying instruction and other services throughout the year.

Changes in Arrangements

The university reserves the right to make, at any time, whatever changes in admission requirements, fees, charges, tuition, instructors, regulations and academic programs it deems necessary prior to the start of any class, term, semester, trimester or session. The university reserves the right to divide, cancel or reschedule classes or programs if enrollment or other factors so require.

FINANCIAL AID

More than two-thirds of the students at the university receive financial assistance annually in the form of scholarships, grants, loans, bursary work and the College Work-Study Program.

Usually, financial aid is not available for the summer term or at midyear. Ordinarily, students needing assistance will seek employment during the summer to help meet their expenses for the following year. Only U.S. citizens and eligible non-citizens qualify for financial aid.

To qualify for financial aid, or to have financial aid continued, a student must maintain "satisfactory progress" as defined elsewhere in this catalog. The Financial Aid Committee will review the records of students not maintaining satisfactory progress at the end of each semester to determine whether aid should be discontinued. Appeals concerning financial aid for extenuating circumstances may be sent in writing to the attention of the committee.

To apply for financial aid, students must do the following:

1. **Complete the university financial aid application form available from the financial aid office and return it to the director of financial aid.**
2. **Obtain a copy of the College Scholarship Service (CSS) Financial Aid Form (FAF)** from their guidance office or the university financial aid office. This should be submitted to the College Scholarship Service after January 1 identifying the University of New Haven to receive a copy of the analysis. The univeristy's CSS Code is *3663*.
3. **Indicate on the FAF that they are applying for the Pell Grant (formerly the Basic Education Opportunity Grant or BEOG).** All aid applicants are required to apply for assistance from this federal program. A Student Eligibility Report will be sent to students from the Pell Grant program office. All three copies of the report must be furnished to the university financial aid office *whether* or *not* the applicant is eligible for an award. Students applying to other colleges may submit a photocopy of the Student Eligibility Report to determine the amount of the award on a preliminary basis.
4. The university financial aid application must be submitted to the Financial Aid Office and the Financial Aid Form sent to the College Scholarship Service by April 1 for returning UNH students and May 1 for new students. Applications received after these dates will only be acted upon if funds remain available.

Please remember that the four steps above must be completed in order to be considered for financial aid. Incomplete applications cannot be considered.

When the financial aid application is completed (and, in the case of new students, when the student has been accepted for admission), the Financial Aid Committee will review applications for eligibility. Eligible students will receive an offer of an award including the type and amount of aid. Students should read the award letter carefully as it gives the terms and conditions of the financial assistance offered. Those not eligible for aid will also be notified.

Budgets

At left, the Hunenko sculpture.

The following are estimated budgets for undergraduate students for the nine-month academic year prepared by the financial aid office for the 1979-80 academic year. Individual budgets may vary depending upon circumstances.

Dependent Students (nine-month budget)

	Resident	Commuter
Tuition	$4,020	$4,020
Student Activity Fee	100	100
Books and Supplies	240	240
Room (or Rent)	1,300	—
Board (or Meals)	975	—
*Travel	100	580
Personal	500	500
Total	$7,235	$5,440

*Travel allowance for resident students is an average figure covering two round trips to home in academic year. Adjusted for individual situations. Commuter allowance is for average travel costs for academic year for students living approximately 12 miles from UNH. Adjusted to public transportation cost when available in local area, and increased for longer distances.

Independent Self-Supporting Students (12-month budget)

	Single	Married
Tuition	$4,020	$4,020
Student Activity Fee	100	100
Books and Supplies	240	240
*Independent Student Allowance (ISA)	5,170	6,950
Total	$9,530	$11,310

*ISA is based on Burea of Labor Statistics data adjusted for inflation of the Consumer Price Index through December, 1978.

Scholarships & Awards

Academic Scholarships

A number of university scholarships are awarded each year on the basis of academic achievement, financial need, evidence of self-help and overall contribution to the university. To be eligible, a student must have a cumulative quality point ratio of 3.2 or better, and must show evidence of financial need.

Donor Scholarships

Many scholarship awards are available each year through the generosity of business firms, organizations and friends of the university. Scholarships marked with an asterisk (*) require special application procedures. Contact the financial aid office for more information.

***Alumni Scholarship**—An annual award of $1,000 is designated for the son or daughter of one of the alumni of the university. Selection will be made by the Student Aid Committee after a review of applicants. This award is given on a one-year basis and is not renewable.

Amity Charitable Trust Fund—An annual award is made from the income of this fund to worthy students, based on ability, promise and financial need without regard to sex, race, country of national origin or religion. Preference is given to students whose homes are in the greater New Haven area.

Bic Pen Company Scholarships—Awards of approximately $500 each are made annually based on financial need, scholarship, and other aid. Preference is given to students from the Milford area.

Bozzutos Charity Sports Classic Scholarship Fund—The interest on this fund is awarded annually to a needy student with good academic standing.

Carmel Benevento Memorial Scholarship—This scholarship is awarded annually to a woman entering the university as a freshman. The award was established in memory of Carmel Benevento. Selection is based on need and outstanding academic or creative ability.

Clarence W. Dunham Scholarship—An annual award of $500 is made to a civil engineering student after completion of the freshman year. Applicants must be recommended by the dean of engineering and the chairman of civil engineering.

Chesebrough-Pond's Inc. Engineering Scholarships—These scholarships are designated for students in the field of engineering. Preference is given to U.S. citizens and minority students. High academic ability and promise are prime considerations.

*__Eder Brothers, Inc.__—Annual awards to hotel management, tourism and travel students in the hotel/restaurant management concentration who have an interest in food and beverage management. Awards are made in the amounts of $500 to a full-time day student and five $100 awards to part-time evening students.

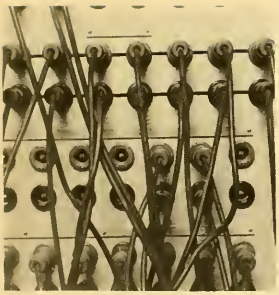
Enthone Scholarship—An award of $1,200 is given annually to a junior or senior in the field of chemistry. The recipient must be a citizen of the United States. Selection is based on activities as well as scholarship.

Ernst & Whinney Scholarship Foundation—Annual awards are made to junior and senior students majoring in accounting. Selection is by the department based on academic achievement.

H. B. Ives Company Scholarship Foundation—An annual award of $500 is made to a male undergraduate seeking a degree in engineering, business administration or management. The recipient must be a resident of New Haven County.

H.H. Brown Shoe Company, Inc.—This scholarship is offered on an annual basis to a junior or senior in business administration or economics. Academic record and financial need will be considered in selection of the recipient.

Junior Achievement Scholarship—Awards are made to entering students who have actively participated in the Junior Achievement program in South Central Connecticut. Selection for this one year award is based on academic record and need for assistance.



The Martin Luther King Jr. Memorial Scholarship Fund—Annual awards are available to students entering the University of New Haven who exemplify the ideals of the late Dr. Martin Luther King, Jr.

M. K. Peterson Scholarship—An annual scholarship award is made in the name of our former president, M. K. Peterson. The award is from the income of a gift from the Connecticut Savings Bank for this purpose. Preference in selection of the recipient is given to sons and daughters of C.S.B. employees.

National Association of Accountants, New Haven Chapter—A scholarship is awarded annually to an accounting student entering second-year studies. Selection is restricted to students living in the greater New Haven area, and is based on academic record and need.

*__National Institute for the Food Service Industry__—The Golden Plate and Heinz Scholarships are available to outstanding students in the Department of Hotel Management, Tourism and Travel, based upon need and ability.

New Haven Water Company—An annual scholarship is awarded to a student from the inner city of New Haven. Selection is made on the basis of financial need and potential for academic success in a college program.

Paul Kane Memorial Scholarship—Award is made annually to a scholar-athlete in memory of Lt. Paul Kane, U.S.N., a former student at the university and captain of the hockey team. Lt. Kane, a pilot in the U.S. Navy, was killed in a crash in the Pacific Ocean in 1974.

Rotary Club International Scholarship—A scholarship of $1,000 for one year is offered to an international student sponsored by a Rotary Club in the greater New Haven area.

Southern Connecticut Gas Company Scholarship—A scholarship of one-half year's tuition is sponsored by the Southern Connecticut Gas Company. This award is made annually to an inner-city resident of New Haven meeting need and academic qualifications.

Southern New England Telephone Company Aid to Scholars—Annual awards are made available to entering freshmen from Connecticut through this scholarship program. Selection for this assistance is based on financial need and academic record.

***Statler Foundation**—The foundation makes annual awards to deserving students in the Department of Hotel, Management, Tourism and Travel.

The Olin Employees Fund—Scholarships are offered to sons and daughters of Olin employees meeting the standards of selection.

Virginia M. Parker Scholarship—Established by Chi Kappa Rho Sorority, it is awarded annually to a freshman woman selected on the basis of scholarship, potential and financial need.

Wallace Silversmiths Division of HMW Industries—A $1,500 annual scholarship award is available to a financially disadvantaged minority student majoring in business administration.

William T. Morris Foundation—Annual awards totalling $15,000 in recognition of outstanding academic achievement are awarded on the basis of financial need.

***Yale University**—The scholarship plan for children of faculty and staff members of Yale University provides scholarship grants to qualified students.

Other scholarships of a restricted nature are also available to qualified students.

Annual prizes include the Freshman Prize and the Nordlund Cup, awarded to an outstanding business major.

Grants

The University of New Haven awards grants to students who have demonstrated academic promise and financial need, and who have contributed to some area of university activity.

Two federal and two state grant programs are also open to University of New Haven students:

Pell Grant (formerly BEOG)—Designed to assist needy students entering postsecondary education. Students apply on the Financial Aid Form (FAF) or directly to the program offices; information and application forms are available at high school guidance offices or at the university financial aid office. All university financial aid applicants are required to apply for a Pell Grant as a part of their university aid application. Awards under the Pell Grant program are presently authorized to a maximum of $1,800.

Supplemental Educational Opportunity Grants (SEOG)—Designed to assist needy students after consideration of other aid available. Awards of $200 to $1,500 may be made annually under this program to students in good standing who are making satisfactory progress toward graduation.

Grants to Connecticut Residents—By act of the Connecticut General Assembly, funds have been made available to assist state residents attending private colleges within the state. In 1980-81 approximately 800 awards were made to students at the university who had financial need. Awards ranged from $200 to $2,000, with the average grant at approximately $980. Eligible students are considered for these awards on the basis of their university financial aid application.

Connecticut Supplemental Grants—Additional funds are awarded to needy Connecticut students attending the university through this program which is similar to the federal SEOG. Grants averaging $800 apiece are made annually to approximately 100 students. The maximum award is $1,500 per year. Recipients are selected by the financial aid office.

Many students at the university receive scholarships and grants from various programs in other states including Pennsylvania, New Jersey and Massachusetts. There are many other organizations and companies offering scholarships and grants. Entering students should explore such opportunities for assistance with the guidance offices of the schools they are currently attending.

Loans

National Direct Student Loans—This federal program was established by the Higher Education Amendments of 1972 replacing the former National Defense Student Loan Program. Funds are available for loans of up to $1,000 annually to needy students with satisfactory academic records. Loans are repayable starting six months after graduation at five percent simple interest.

United Student Aid Fund—This private, nonprofit service corporation provides long-term, low-interest loans to upperclassmen in good standing. Guaranty funds were provided by a donation of the Day Student Government so that the university could participate.

Guaranteed Loans—The State of Connecticut and many other states have established higher education loan programs offering long-term loans at low interest rates. In Connecticut, a student may borrow up to a maximum of $2,500 each school year, repayable starting after graduation. Federal interest benefits cover full interest while in attendance as long as good academic standing and satisfactory progress are maintained.

Institute of Electrical and Electronic Engineers—The Connecticut Section of the Institute of Electrical and Electronic Engineers Student Loan Fund offers non-interest-bearing loans to senior students in electrical engineering.

Additional Loans—Loan assistance to students in temporary financial difficulty is available through the Roy M. Jenkins Jr. Memorial Fund and The C.L. Robertson Emergency Loan Fund. Both of these are administered by the financial aid office.

Student Employment

College Work-Study program—A federal assistance program designed to enable students having financial need to work both during the summer and through the school year, thus earning a substantial portion of their college expenses. Work assignments are made on campus and also with public and private non-profit agencies such as the YMCA, YWCA, New Haven Boys' Club, City of New Haven, Social Security, State of Connecticut and South Central Criminal Justice Planning Agency.

Bursary work—The university provides many jobs on campus for deserving students who meet the criteria set by the financial aid office. Students must submit a financial aid application in order to be considered for bursary awards. Awards are made each semester of approximately $600 for working an average of 12 hours per week.

ACADEMIC REGULATIONS

Academic Honesty

Academic dishonesty is not tolerated at the University of New Haven. All students are responsible for reading and understanding the statement on academic honesty in the Student Handbook.

Violation of university standards for academic honesty, including plagiarism, will be a sufficient reason for an F in the course and will be reported to the dean of student affairs and services. A second violation may be cause for expulsion from the university.

Plagiarism is defined as the unacknowledged use of another person's work or the submission of the same work for more than one course without expressed written permission in advance.

Attendance Regulations

Every student is expected to attend all regularly scheduled class sessions. Specific course attendance guidelines are established by the academic departments or each individual faculty member.

From time to time, it may become necessary for the university to compile attendance records for every course in order to meet the needs of regulatory agencies, accrediting bodies or for other purposes.

A maximum of two weeks of absences will be permitted for illness and emergencies. The instructor has the right to dismiss from class any student who has been absent more than the maximum allowed. Please refer to the Student Handbook for further clarification of attendance requirements.

Advanced Study

Advanced study courses are offered to qualified students in the departments offering the degrees of bachelor of science or bachelor of arts. These courses may include a thesis, tutorial work or independent study, which permits the student to work intensively in areas of special interest.

Class

In order to be classified as a sophomore, a student must have completed 27 credit hours in an approved program; a junior, 57 credit hours; a senior, 87 credit hours.

Changing a Major

Students wishing to make a change in major or program must meet with the chairman of the department into which they wish to transfer. In consultation with the student, the chairman will prepare a change of major form and forward it to the Student Records Office.

Coordinated Course

Courses taken by matriculated UNH students at regionally or nationally accredited institutions may be designated as "coordinated courses." Credit for such courses is accepted and posted on the students permanent records and the grades are included in the students' quality point ratios.

Prior authorization for a "coordinated course" designation must be obtained from the departments housing the student's major and the analogous course at UNH. The appropriate form must be obtained at the Student Records Office, approved, and returned to that office before the course in question begins. Normally, approval is only granted for those courses which are analogous to courses offered at UNH and/or are standard courses in a given discipline and which are unavailable at UNH because of frequency offerings, cancellation, etc., or inaccessible to the student because of temporary residency at a distant location.

Courses Available at Other Colleges

The University of New Haven has established policies to allow its students to take courses at Southern Connecticut State College, Albertus Magnus College, Quinnipiac College and the University of Bridgeport.

University of New Haven students interested in taking courses at other colleges and universities should discuss this matter directly with their departments and consult the statement of policy established by the undergraduate school in which they are enrolled.

Cross registration for full-time UNH students into courses at the University of Bridgeport is now available. Students should follow the "coordinated course" procedure detailed above.

Dean's List

The dean's list honors students who demonstrate excellence in their academic performance. Full-time students who earn a quality point ratio of 3.20 or better in any one semester will be appointed to the dean's list for that semester.

Part-time students who have accumulated a minimum of 14 credit hours of course work at the university will automatically be considered for the dean's list at the end of each semester. A cumulative quality point ratio of 3.20 or better is required.

Dropping/Adding a Class

Students who wish to make a change in class schedule must complete a "Drop Slip" or an "Add Slip" or both. These are available from the Student Records Office. A fee will be charged for adding courses after the announced deadline.

The last date to add classes is one week into the semester, and is listed in the academic calendar. No classes may be added after this date without special approval from the instructor, the department and the dean. All changes should be completed prior to the second week of class so that students may be properly registered in the correct sections.

Full-time Students

Full-time student status is attained by registering for a minimum of 12 credits per semester, or equivalent term, on either a matriculated or nonmatriculated basis. Such status is continued to a succeeding term provided a minimum of 12 credits are completed in the term of record. Completion is defined as receipt of a letter grade of **A, B, C, D, F, S** or **U**; other letter grades do not signify course completion.

Full-time students are eligible for all daytime student activities and benefits, and are subject to Day Division tuition charges and other relevant fees. It is assumed that full-time students will select the great majority, if not all, of their courses from Day Division schedules, unless needed courses are unavailable in the Day Division.

Grade Reports

Reports of the final grade in each subject will be mailed to the student soon after the close of each semester. The university will release grades to a student's employer upon request, but only if the student has given prior authorization.

Grading System

The following grading system is in use and, except where otherwise specified, applies both to examinations and to term work. The weight of a final examination grade is a matter individually determined by each instructor.

A — Superior
B — Good
C — Fair
D — Lowest passing grade
F — Failure or withdrawal after the first half of the semester with unsatisfactory work
I — Incomplete

1. The grade of **I** indicates that some work remains to be completed to gain academic credit for a course. An **I** is assigned at the discretion of the instructor. This assignment shall not be automatic, but shall be based upon an evaluation of the student's work completed to date and an assessment of the student's ability to complete course requirements within the allowed time limit.

2. Work to remove an **I** must be performed within the twelve (12) months following the last day of the semester in which an **I** is incurred.
3. When such work is completed, the instructor will assign a final grade for the course.
4. Should the student fail to complete unfulfilled academic assignments within twelve (12) months, the grade of **W** will be entered on the student's record. **This grade will be final; no further opportunity to complete the course will be available to a student after this time.**

W—Withdrawal. Indicates withdrawal from the course after the first half of the semester with satisfactory work in the course up to the time of withdrawal, or withdrawal from the university after the twelfth week of classes. The grade of **W** will not be assigned to any student who has taken the final examination in the course.

S— Satisfactory. Given only in non-credit courses.

U—Unsatisfacotry. Given only in non-credit courses.

Graduation

Matriculated students are required to petition the registrar for graduation in the term immediately preceding their anticipated commencement. Forms, schedules, and graduation fees are published each term by the registrar.

Graduation is not automatic. Petitions, once filed, insure that a student's record will be formally assessed in terms of degree requirements, and that it will be submitted to the faculty and the Board of Governors for final approval. A petition may be denied by the registrar if graduation requirements are not met. If a petition is approved, a degree will be awarded at the appropriate commencement.

A degree will be conferred by the Board of Governors when a student has satisfied all program requirements and has met the following university requirements:

1. successfully petitioned the registrar and paid all graduation fees;
2. earned a cumulative quality point ratio of no less than 2.00 in all courses applicable toward the degree;
3. earned a cumulative quality point ratio ot no less than 2.0 (or higher if required by an individual department) in all courses in the student's major field of study;
4. been recommended by the faculty;
5. met all financial and other obligations and conformed to any local, state or federal law concerning graduation, and
6. met the residency requirements of the university.

Honors

Honors may be conferred upon candidates for graduation according to the following standards:

1. An associate degree **With Honors** is awarded to students who have a quality point ratio of 3.25 for the credit hours specifically required for the degree program from which they are being graduated and who have taken 30 or more hours of required work at this university.
2. An associate degree **With High Honors** is awarded to students who have a quality point ratio of 3.50 for the credit hours specifically required for the degree program from which they are being graduated and who have taken 30 or more hours of required work at this university.
3. The bachelor's degree **Cum Laude** is awarded to students graduating with a cumulative quality point ratio of at least 3.25, who have taken 60 or more credit hours of required work at this university and who have completed all the suggested courses within their curriculum.
4. The bachelor's degree **Magna Cum Laude** is awarded to students graduated with a cumulative quality point ratio of at least 3.50, whose quality point ratio in all courses counting toward their major is at least 3.50, who have taken 60 or more credit hours of required work at this university, and who have completed all the suggested courses within their curriculum.

5. The bachelor's degree **Summa Cum Laude** is awarded to students graduating with a cumulative quality point ratio of at least 3.70, whose quality point ratio in all courses counting toward their major is at least 3.70, who have taken 60 or more credit hours of required work at this university, and who have completed all the suggested courses within their curriculum.

In determining eligibility for degrees with honor transfer credit, credits earned by crediting examinations and electives in excess of those required will not be considered. Only the cumulative quality point ratio for courses completed at the University of New Haven is considered in determining a student's eligibility for honors.

Independent Study

In all courses of independent study, including internships, case studies, reading programs, practica, theses and work-study experiences, the student and an adviser must jointly file a project outline with the registrar within four weeks of the beginning of the course. This outline shall serve as the basis for determining satisfactory completion of course requirements. In the case of intensive or condensed course work, project outlines must be filed at least one week prior to the last day of the session.

Independent study is restricted to seniors, juniors and exceptionally qualified sophomores. Students must have at least a 3.0 quality point ratio.

Leave of Absence

Baccalaureate students who are in good standing may interrupt continuous enrollment by electing to take a leave of absence from the university. The purpose may be for personal reasons, to pursue a program of study at another institution, or to engage in other off-campus educational experience without severing their connection with the University of New Haven through withdrawal. Before taking a leave of absence, students are encouraged to discuss their particular situation with an academic adviser, the dean of their school, the dean of student affairs, or someone in the Counseling Center. The following rules are in effect:

- A student must secure the approval of an academic dean or the dean of student affairs on the leave of absence form.
- If the leave is approved by a dean, the form is filed at the Registrar's Office on or before the last day of the semester preceding the start of the leave.
- Leaves are not required or granted for summer periods alone.
- Normally, leaves are not approved for a period longer than two semesters, or for one year. Under special circumstances, a leave of absence may be approved to a maximum of four semesters, or two years.
- A student who has withdrawn as a degree candidate is not eligible for a leave of absence. A student who has been dropped or dismissed from the university is not eligible for a leave of absence until properly reinstated. If a student withdraws while on a leave of absence, the leave is invalidated.
- A student who fulfills the conditions of an approved leave of absence may register upon return without applying for readmission, and the student may preregister for the returning semester.
- If a student desires to return later than the semester agreed upon on the leave of absence form, the person must make application for readmission through the Admissions Office.
- A student who plans to enroll for course work at another accredited institution during a leave of absence should review program plans with the dean of his or her school to verify the eligibility for receiving credit at the University of New Haven.
- Before beginning a leave of absence, a student is responsible for clearing with other appropriate offices, such as Financial Aid, Bursar's Office, etc. A student on leave may not carry an outstanding balance at the university.
- If the leave of absence is desired because of medical reasons, a note supporting the leave is required from a doctor. A doctor's clearance is required when the student wishes to return to the university at the end of the leave.

The North Campus Gymnasium.

Matriculation

Matriculation is the formal act of registering to study for a specific degree offered by the university. Matriculation is, therefore, not automatic. A student must request matriculation by seeking admission to a specific university degree program. Formal acceptance into a degree program shall constitute the granting of matriculation.

Students seeking credit to be transferred to another institution, or who wish simply to audit courses or to take them without working toward a degree, need not matriculate. Nonmatriculated students must register to take their chosen courses, however, and will be allowed to enroll in courses only as space permits. It is the student's responsibility to seek matriculation should he or she later decide to pursue a University of New Haven degree.

Physical Education Requirement

This requirement may be met by choosing a three-credit course entitled "Leisure Living" or two semesters of physical education courses (PE 111 and PE 112), which offer a choice of activities.

Students may be exempt from the requirement if they are UNH freshmen 24 years or older, have completed 18 months or more of active military duty, or if their transcripts show they have completed the physical education requirement at another college. Waiver requests should be submitted to the physical education department chairperson.

Probation and Dismissal

Failure to maintain satisfactory progress as defined below will place students on academic probation for the following semester of enrollment. Students are automatically dismissed when they receive a third probation or when their quality point ratio for any one semester is less than 1.00.

First-semester freshmen earning a quality point ratio less than 1.00 are automatically referred to the Academic Standing and Admissions Committee which may specify conditions for continued enrollment. A record of committee action shall appear on the student's permanent record. Committee decisions are normally viewed as final, and may be reversed only by the provost or president of the university.

Academic probation of transfer students is determined in accordance with the same, graduated, minimum cumulative quality point ratio scale as for nontransfer students detailed above. In determining a transfer student's academic standing, the student's total semester hours completed—those received at other colleges plus those received at the University of New Haven—are applied to the minimum cumulative quality point ratio scale.

Students who are dismissed will be notified by the registrar immediately after the action is authorized by the Committee on Academic Standing and Admissions.

The student may appeal the action by formally reapplying to the director of admissions with letters stating all reasons or extenuating circumstances that would justify the reversal of the dismissal. The Academic Standing and Admissions Committee will review appeals. If the appeal is denied, students are not responsible for tuition following dismissal. Students may reapply after one semester.

Quality Point Ratio

The academic standing of each student is determined on the basis of the quality point ratio earned each semester. The quality point ratio is determined by using the quality points assigned to each student's grade.

To determine the total number of quality points earned during a semester, each letter grade is assigned a quality point value:

A — four quality points
B — three quality points
C — two quality points
D — one quality point
F — zero quality points
I — zero quality points
W — zero quality points
S — zero quality points
U — zero quality points

The quality point value for each grade earned during a semester is multiplied by the number of credit hours assigned to that course as listed elsewhere in this catalog. The sum of these points is the total number of quality points earned during the semester.

This sum is divided by the number of credit hours completed (hours from courses with grades of **A, B, C, D, F, S** or **U**) to obtain the quality point ratio.

The cumulative quality point ratio is obtained by calculating the quality point ratio for all courses attempted at the University of New Haven.

Readmission

Application for readmission after students have been dismissed normally will be considered only after the lapse of a semester and only when students provide evidence which indicates probable success if readmitted.

Unusual circumstances may permit earlier application if a student's dean and department chairman successfully petition the Academic Standing and Admissions Committee to review the applicant's case.

Requests for readmission should be submitted in writing to the director of admission for transfer to the chairman of the Academic Standing and Admissions Committee at least three weeks before the opening of the semester, and should include evidence supporting the student's belief that he or she will succeed if readmitted.

A student who has been absent from the university for one or more semesters must submit a new application and pay another application fee. If the student has attended another college or university an official academic transcript is required from that institution. Following the receipt of the above material, action will be taken on the application for readmission.

Readmission is not automatic. The Academic Standing and Admissions Committee reviews each application and makes a decision on acceptance, rejection or conditional acceptance of students.

Repetition of Work

A course which a student has completed may be repeated only with the consent of the chairman of the department in which the course is listed. If a student achieves a higher grade in the second attempt, that grade rather than the first will be used to compute the cumulative quality point ratio. However, both the higher and the lower grades in the course remain in the student's permanent record.

Residency Requirements

The residency requirements of the university is 30 credit hours taken at West Haven or at one of the university's off-campus centers. This requirement applies to all degrees, undergraduate and graduate.

To insure depth of study, the residency requirement must include 12 credit hours of work in the declared major for an associate degree, and 18 credit hours for a bachelor's degree. Exceptions may be granted only by the dean administering the major.

Satisfactory Progress

Satisfactory progress toward a degree is defined as maintenance of full-time status, provided a student is fully matriculated in the Day Division. Full-time students must complete a minimum of 12 credits per semester to retain their status as full-time students. Completion is defined as a receipt of a letter grade (**A** to **F**) as opposed to a Withdraw (**W**) or an Incomplete (**I**). Decisions on student status are made by the registrar.

Students are required to maintain a minimum cumulative quality point ratio in accordance with the following scale:

Quality point ratio of 1.50 for 3 to 30 credit hours attempted
Quality point ratio of 1.60 for 31 to 45 credit hours attempted
Quality point ratio of 1.70 for 46 to 60 credit hours attempted
Quality point ratio of 1.80 for 61 to 75 credit hours attempted
Quality point ratio of 1.90 for 76 to 90 credit hours attempted
Quality point ratio of 2.00 for 91 or more credit hours attempted

Appeals involving extenuating circumstances may be addressed to the chairman of the Faculty Senate for resolution by appropriate Faculty Senate committees.

Transfer of Credit from the University

Credits may be transferred from the University of New Haven, a fully accredited university, to any other college or university merely by obtaining a letter of authorization from the school to which the transfer of credit is desired.

Withdrawal from a Class

Students desiring to **withdraw formally from a class** may do so before the last day to DROP courses published in the academic calendar. Formal withdrawal removes the student's name from the class roll and removes the course listing from the student's record and transcript. The student must obtain a DROP card from the Student Records Office, complete it and sign it. Signatures of the instructor and the student's academic adviser must be obtained. The card is then returned to the Student Records Office.

Students withdrawing from a class after the last day to drop courses will receive either a grade of **W** or **F**. The grade assigned by the instructor will depend on whether or not the student's work in the course has been satisfactory up to the time of withdrawal. If a grade of **W** is assigned, it will appear with the course name on the student's record and transcript.

Filing a "Drop" slip does not quality the student for cancellation of any university tuition or fee.

Withdrawal from the University

Students desiring to **withdraw from the university** must complete the necessary form at the Counseling Center by the twelfth week of classes in the semester. They should also notify their instructors.

It is the student's obligation to complete this procedure. Failure to do so leaves the student liable for all of the current semester's tuition and fees, and may result in grades of **F** being assigned in the student's courses.

To obtain any cancellation of tuition and fees (as described in this catalog), formal withdrawal must be completed during the first four weeks of the semester.

Because of the serious ramifications of formal withdrawal, students contemplating such should discuss the matter with a counselor as soon as problems are perceived.

Required Medical Withdrawal

A student may be evaluated by a Counseling Center or Health Service professional, and that person, in consultation with another professional member of the Counseling or Health Center staff, may recommend to the dean of student affairs or his designee that a student be immediately withdrawn without prejudice from the university. This recommendation shall be made in consideration of the student's physical and/or mental health, safety, and well-being and the similar health, safety, and well-being of members of the university community.

The dean of student affairs or his designee shall discuss the need and procedure for the withdrawal with the professionals involved and other persons deemed necessary. When withdrawal is implemented, the dean or his designee shall meet directly with the student to inform him or her of the need and conditions of the withdrawal if this meeting is possible and/or appropriate. The university reserves the right to inform the parents of a dependent student of the forced medical withdrawal.

Readmission following medical withdrawal will require a positive evaluation of the student's condition by the appropriate Counseling or Health Center professionals and a personal intervew with the dean or his designee. On the basis of the information received, the dean will approve or disapprove the application as part of the admissions process.

SCHOOL OF ARTS AND SCIENCES

Ralf E. Carriuolo, Ph.D., acting dean

The ideals of a liberal education are intellectual and imaginative growth, freedom of thought and inquiry and a sense of personal worth. The active pursuit of wisdom, the enrichment of the spirit and the development of each individual as a person offer the world its best hope for the future.

It is the aim of the School of Arts and Sciences to offer students the opportunity for a liberal education which will enrich the mind while it prepares them to pursue their interests and goals. Courses and programs have been designed to appeal to a wide range of interests and to secure the commitment of each student who is seriously engaged in the acquirement of an education.

Education is made up of a great many things, and not all education takes place in the classroom or even on the campus. New Haven is an exciting cultural center which offers libraries, natural history museums, art museums and exhibitions and workshops for dance and the creative arts. A constant procession of speakers and performing artists comes to the New Haven area. Long Wharf Theater is the home of an excellent regional company offering a varied fare of classics and new plays, and the Yale Repertory Theater is innovative and exciting. Programs of old and new films are offered on several college campuses in the area.

Speakers and performing artists are brought to the campus of the University of New Haven and a series of concerts is organized by the world music program. An annual arts festival allows artists to exhibit their work. The university's new library offers comfortable surroundings for study and leisure reading. It has an excellent collection of books, journals, periodicals and phonograph records.

In the School of Arts and Sciences, students are encouraged to pursue as broad-based a program of study as possible. The school offers the degrees of bachelor of arts, bachelor of science and associate in science.

Programs

Master of Arts
Community Psychology
Gerontology
Humanities
Legal Studies
Organizational/Industrial Psychology

Master of Science
Environmental Sciences

Senior Professional Certificate
Applications of Psychology

Bachelor of Arts
Art
- Fashion Design
- Graphic and Advertising Design
- Interior Design

Biology
Chemistry
Communication

Economics
English
  Writing Concentration
  Literature Concentration
History
Mathematics
Philosophy
Physics
Political Science
Psychology
Sociology
  Social Welfare
World Music

Bachelor of Science

Applied Mathematics
  Natural Science Concentration
  Computer Science Concentration
Biology
Biological Illustration
Environmental Studies
Microbiology
Physics

Associate in Science

Biology
Environmental Studies
Fashion Design
General Studies
Graphic and Advertising Design
Interior Design
Journalism
Photography

Certificate Programs

Art
  Advertising
  Fashion Design
  Interior Design
  Photography
Communication
  Journalism
Institute of Law and Public Affairs
  Paralegal Studies

Academic Programs

The School of Arts and Sciences offers programs leading to the bachelor of arts degree, the bachelor of science degree, the associate in science, and a number of certificate programs.

Through the Graduate School, the School of Arts and Sciences offers programs leading to the master of arts degree, the master of science degree, and senior professional certificates.

Bachelor's Degrees

The bachelor's degree programs generally require 120 credit hours of study and take four years for full-time day students. Many other University of New Haven students take advantage of the full range of courses offered in the evening and complete their undergraduate degree on a schedule that complements their own careers.

Associate Degree Programs

The associate degree program is designed to encourage students to begin their college education even though they do not yet want to commit themselves to a full, four-year course of study. Sixty or more credit hours are required for the associate degree, and the credits earned may later apply toward the student's bachelor's degree.

The student wishing to pursue this option is encouraged to consult with the dean of the school or with the chairman in whose departments the associate degree program is offered. Students who complete associate degree work may wish to have their credits applied toward further study leading to the bachelor of arts or bachelor of science.

Minors

It is highly recommended that students working toward a degree in one area of study give serious thought to organizing their elective courses so as to receive a minor in a second discipline. A minor usually consists of 18 credit hours devoted to the study of either a group of related subjects or subjects offered by one department.

Minors are offered in aeronautical technology, anthropology, art, biology, black studies, biochemistry, chemistry, communication, English, environmental studies, forensic science, history, journalism, mathematics, nutrition, philosophy, physics, political science, psychology, social welfare, sociology, teacher education and world music. Students interested in studying for a minor should consult with the chairman of the department offering the minor.

Certificate Programs

Students can take their first step toward an undergraduate degree by registering for one of the certificates offered by the School of Arts and Sciences.

Each certificate program is carefully designed as a concentrated introduction to a particular subject area and generally consists of courses totaling 15 to 18 credit hours.

Later, students may choose to apply the credits they have earned toward their undergraduate degree at the university.

Admission Criteria

An applicant for admission to the School of Arts and Sciences must be a graduate of an approved secondary school or the equivalent. While no set program of high school subjects is prescribed, an applicant must meet the standard of the university in respect to the high school average. Applicants must present 15 acceptable units of satisfactory work, including nine or more units of college preparatory subjects. Satisfactory scores on College Entrance Examination Board (S.A.T.) or American College Testing (A.C.T.) program tests are required.

Core Requirements

All students enrolled in bachelor's degree programs in the School of Arts and Sciences must take the following groups of core requirements, usually within the first two years of study. The core courses and the departmental requirements must be met by all candidates for the bachelor's degree in the School of Arts and Sciences.

Required Courses

English and Humanities

3 credit hours English composition
3 credit hours English composition and literature
6 credit hours fine arts (art, music, theatre)
6 credit hours literature
3 credit hours philosophy

Social Sciences

3 credit hours economics
6 credit hours history, 3 credits hours must be HS 101 or 102
3 credit hours psychology
3 credit hours sociology
3 credit hours political science
3 credit hours chosen from any social science department

Science and Mathematics

11-12 credit hours physics, chemistry, science, biology and mathematics, must include one semester of a laboratory science with laboratory.
M 103 does not count toward the core requirements.

A.S., General Studies

The School of Arts and Sciences offers the A.S. in general studies to serve two different student populations. The first is the new or returning student who wishes a general liberal arts education for personal enrichment. The second type of student is one who is undecided about career objectives and wishes to defer the choice of a major field.

Nearly half of the 60 credit hours required for the degree are free electives. This flexibility permits the student to take courses in a number of different fields prior to choosing a major. By judicious choice of electives, it is possible to transfer into majors in any of the schools in the university.

Students planning to transfer to four-year programs in the School of Arts and Sciences should note additional core requirements in science and mathematics, English literature, fine arts and social science, as well as special requirements in particular major programs.

Required Courses

Students must complete 60 credit hours of courses to earn the associate in science degree with a general studies major, including the courses listed below.

E 105 Composition
E 110 Composition and Literature
EC 133 Principles of Economics I
E 111 & 112 Physical Education I & II
PL 111 Introduction to Philosophy
PS 121 American Government and Politics
SO 113 Sociology

6 credit hours of history including HS 101 or HS 102 Western Civilization I or II.
6 credit hours of science or mathematics electives.
24 credit hours of electives, with 12 hours of foreign languages recommended.

Department of Art

Chairman: Associate Professor Jean Henry, Ph.D., Florida State University

Professor: Elizabeth Moffitt, M.A., Hunter College

Associate Professor: Joan A. Gardner, M.F.A., University of Illinois

Assistant Professor: Edward J. Maffeo, Ph.D., New York University

Understanding the history and practice of the visual arts gives us one essential tool for understanding ideas and culture, and for thinking about the individual's relationship to society. The study of visual arts also provides an opportunity for self-expression. Our various programs help encourage and develop the student's sensitivity to materials and ideas which will encourage both understanding and expression.

Equally important is the practical application of technical skills which when synthesized with understanding and expression help the student compete in today's marketplace. Our small classes are designed for individual attention to encourage the student to achieve the integration of these three essential factors: understanding, expression and technical skill.

Foundation courses in drawing, two-and-three dimensional design and the history of art provide the basis of all students' training. Work in color theory, painting, sculpture, ceramics, printmaking and photography provide the necessary vocabulary for effective visual communication. Courses in specific majors help refine the student's technical knowledge.

Foundation courses in the Department of Art are sequentially structured. We strongly recommend that students stay in close consultation with the art faculty and department chair prior to scheduling.

By combining the historical perspective with fundamental techniques and advanced courses, students may prepare for career opportunities as well as graduate study in such fields as art, business, education and industry in such specific areas as graphic and advertising design, fashion design, interior design, photography, biological illustration. We offer internships with local firms and organizations for advanced students to experience "on the job" situations. Our focus is to aid students in applying their theoretical and applied training to the work situation. The art faculty of the University of New Haven is committed to responding to the community it serves and preparing its students for a professional life.

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, consult the Co-op Education director or your faculty advisor.

B.A., Art

All students in the B.A. in art program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and 42 credit hours of art, including the courses listed below:

Required Courses

AT 101 Introduction to Studio Art
AT 105 & 106 Basic Drawing I & II
AT 107 Anatomical Drawing for the Artist
AT 201 Painting I
AT 211 & 212 Basic Design I & II
AT 213 Color
AT 231 & 232 History of Art I & II
AT 331 Contemporary Art
AT 401 Studio Seminar I

B.A., Fashion Design

Practitioner-in-Residence: Louise S. Robinson, Ralph Chieffo School of Tailoring; State of Connecticut certification in Vocational Teaching; New Hampshire College

All students in the B.A. in art program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and the courses listed below:

Required Courses

AT 101 Introduction to Studio Art I
AT 104 Weaving
AT 105 & AT 106 Basic Drawing I & II
AT 122 Layout and Printing
AT 201 Painting I
AT 211 & AT 212 Basic Design I & II
AT 213 Color
AT 231 & AT 232 Art History I & II
AT 302 Figure Drawing
AT 309 Photographic Design
AT 313 Photography
AT 319 Textile Design
AT 320 Fashion Design
AT 321 Fashion II
AT 322 Illustration
AT 401 & 402 Studio Seminar I & II
RT 121 Retailing
RT 212 Textiles
RT 218 Fashions in Retailing

B.A., Graphic and Advertising Design

Practitioner-in-Residence: Johan Severtson, M.F.A, Yale University; M.F.A., University of Chicago

All students in the B.A. in art program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and the courses listed below:

Required Courses

AT 101 Introduction to Studio Art I
AT 105 & 106 Basic Drawing I & II
AT 122 Layout and Printing Techniques
AT 203 & 204 Commercial Art I & II
AT 211 Basic Design I
AT 213 Color
AT 231 & 232 History of Art I & II
AT 302 Figure Drawing
AT 309 Photographic Design
AT 312 Lettering
AT 313 Photography
AT 322 Illustration
AT 330 Film Animation
AT 331 Contemporary Art

B.A., Interior Design

Practitioner-in-Residence: Sharon Matthews, B.A., Columbia University; Yale University School of Architecture

All students in the B.A. in art program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and the courses listed below:

Required Courses

AT 101 Introduction to Studio Art I
AT 104 Weaving
AT 105 & 106 Basic Drawing I & II
AT 211 & 212 Basic Design I & II
AT 213 Color
AT 216 Architectural Drafting
AT 231 & 232 History of Art I & II
AT 233 History of Interior Design
AT 302 Figure Drawing
AT 312 Lettering
AT 317 Interior Design
AT 319 Textile Design
AT 322 Illustration
AT 401 & 402 Studio Seminar I & II

Recommended Courses

AT 203 Commercial Art I
AT 309 Photographic Design

Art History electives.

B.S., Biological Illustration

Practitioner-in-Residence: Virginia Simon, Art Students League; New Art School; Head, Medical Illustration, Yale University Medical School.

The departments of art and biology jointly offer this major which includes the combination of courses necessary for career advancement in this field.

For specific program requirements, please see the complete listing under the Department of Biology.

A.S., Graphic and Advertising Design

Required Courses

AT 101 Introduction to Studio Art I
AT 105 & 106 Basic Drawing I & II
AT 122 Layout and Printing Techniques
AT 203 & 204 Commercial Art I & II
AT 211 Basic Design I
AT 213 Color
AT 231 & 232 History of Art I & II
AT 309 Photographic Design
AT 312 Lettering
AT 330 Film Animation

A.S., Interior Design

Required Courses

AT 101 Introduction to Studio Art I
AT 105 & 106 Basic Drawing I & II
AT 203 Commercial Art I
AT 211 & 212 Basic Design I & II
AT 213 Color
AT 216 Architectural Drawing
AT 231 & 232 History of Art I & II
AT 233 History of Interior Design
AT 312 Lettering
AT 317 Interior Design
AT 322 Illustration
AT 401 Studio Seminar I
AT 309 Photographic Design (recommended)

A.S., Fashion Design

Required Courses

AT 101 Introduction to Studio Art I
AT 105 Basic Drawing I
AT 211 & 212 Basic Design I & II
AT 213 Color
AT 231 & 232 History of Art I & II
AT 302 Figure Drawing
AT 319 Textile Design
AT 320 & 321 Fashion Design I & II
AT 322 Illustration
AT 401 Studio Seminar I
RT 121 Retailing
RT 212 Textiles
RT 218 Fashions in Retailing

A.S., Photography

Practitioner-in-Residence: Timothy Feresten, M.F.A., Yale University

Required Courses

AT 101 Introduction to Studio Art I
AT 105 Basic Drawing I
AT 211 Basic Design I
AT 231 & 232 History of Art I & II
AT 309 Photographic Design
AT 310 Studio Lighting
AT 313 & 314 Photography I & II
AT 331 Contemporary Art
AT 400 Advanced Photography III

Minor in Art

A total of 18 credit hours of work in art is required for the minor in art. Students may take the courses listed below and any other combination of courses that fills their needs and interests.

Recommended Courses

AT 105 Basic Drawing I
AT 211 or 212 Basic Design I or II
AT 231 & 232 History of Art I & II

Art Certificate Programs

Coordinator: Jean Henry, Ph.D.

The art department offers certificates in advertising, fashion design, interior design and photography. Students must complete 15 to 18 credit hours of required courses to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, if you are admitted, the credits earned may be applied toward the requirements for a degree program.

Advertising Certificate

A certificate to prepare persons already in industry who wish to update their commercial art skills or for persons who wish experience in layout, design and the principles of effective design communication. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

AT 105 Basic Drawing I
AT 122 Layout and Printing Techniques
AT 203 & 204 Commercial Art I & II
AT 211 Basic Design I
AT 322 Illustration or AT 312 Lettering

Fashion Design Certificate

A program for beginners as well as individuals already working in the fashion industry who wish to add to their knowledge of the technical skills of fashion creation, marketing, and merchandising. Sewing and pattern-making skills are enhanced through the teaching of pattern-making and textile design processes. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

AT 104 Weaving
AT 105 Basic Drawing I
AT 211 Basic Design I
AT 302 Figure Drawing
AT 319 Textile Design
AT 320 & 321 Fashion Design I & II

Interior Design Certificate

A program developed for individuals seeking a professional knowledge of design and decorating skills applicable to both home and office decoration. All students are required to take 15 credit hours, including the courses listed below:

Required Courses

AT 105 Basic Drawing I
AT 211 Basic Design I
AT 216 Architectural Drawing
AT 233 History of Interior Design
AT 317 Interior Design

Photography Certificate

A program in the basic design principles and techniques which govern photography. Designed for beginners, for people who want to apply photography to their present jobs, and for people who want to improve their present photography skills.

This certificate also offers a foundation in photography for pleasure and leisure activities and for an aesthetic appreciation of photography as well. Students are required to take 15 credit hours, including the courses listed on following page:

Required Courses
AT 211 Basic Design I
AT 309 Photographic Design
AT 313 & 314 Photography I & II
AT 330 Film Animation

Department of Chemistry

Chairman: Associate Professor George L. Wheeler, Ph.D., University of Maryland

Professor: Peter J. Desio, Ph.D., University of New Hampshire

Assistant Professor: Michael J. Saliby, Ph.D., State University of New York at Binghamton

B.A., Chemistry

This program is designed to provide a traditional liberal arts background with the basic requirements of a chemistry major.

A complete listing of the descriptions of courses and the B.S. and A.S. programs in chemistry appears in this catalog under the School of Engineering.

Required Courses

All students in the B.A. in chemistry program must complete 126 credit hours. These courses must include the core requirements for the School of Arts and Sciences and the courses listed below:

CH 115 & 116 General Chemistry I & II
CH 117 & 118 General Chemistry Laboratory I & II
CH 201 & 202 Organic Chemistry I & II
CH 203 & 204 Organic Chemistry Laboratory I & II
CH 211 Quantitative Analysis with Laboratory
CH 221 Instrumental Methods of Analysis with Laboratory
CH 331 & CH 332 Physical Chemistry with Laboratory I & II
CH 411 & CH 412 Seminar I & II
CH 501 Advanced Organic Chemistry
CH 521 Advanced Inorganic Chemistry
M 117, M 118 & M 203 Calculus I, II & III
PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory

6 credit hours foreign language (German recommended).
18 credit hours of electives.

Department of Communication

Acting Chairman: Associate Professor Steven A. Raucher, Ph.D., Wayne State University

Professor: Marilou McLaughlin, Ph.D., University of Wisconsin

Assistant Professors: Jean Bodon, M.A., University of Alabama; Elwood Goulart, Ph.D., Indiana University

The communication programs at the university allow each student to develop interpersonal and mass communication skills and awareness through a sequentially patterned series of course offerings.

Complete information about the bachelor of science degree program in communication is listed under the School of Business elsewhere in this catalog. Also included are course listings and information concerning communication as a minor field of study.

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For details, consult the Co-op Education director or your faculty advisor.

B.A., Communication

The University of New Haven offers a B.A. and a B.S. in communication. Please see the School of Business section of this catalog for information about the B.S. in communication.

Required Courses

All students in the B.A. in communication program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and 36 credit hours of communication courses, including those listed below:

CO 100 Human Communication
CO 101 Fundamentals of Mass Communication
CO 200 Theories of Group Communication
CO 208 Introduction to Broadcasting
CO 300 Persuasive Communication
CO 302 Social Impact of Media
CO 307 Writing for TV and Radio
CO 308 Broadcast Journalism
CO 340 History of Film

A.S., Journalism

Program Coordinator: Associate Professor Steven A. Raucher, Ph.D.

Practitioner-in-Residence: John Hale, M.A., Hunter College

The School of Arts and Sciences offers journalism as both an associate in science degree major and as a minor in a bachelor's degree curriculum.

A curriculum built around a minor in journalism and a bachelor's degree major such as communication, English, history, political science, social welfare or environmental studies provides an excellent undergraduate education for a potential journalist.

Internships—work on local newspapers for academic credit—are available for qualified students.

Required Courses

Students must complete 60 credit hours of courses to earn the associate in science degree with a journalism major, including the courses listed below:

J 101 & 102 Journalism I & II
J 201 News Writing and Reporting
J 202 Advanced News Writing and Reporting
E 105 Composition
E 110 Composition and Literature
EC 133 & 134 Principles of Economics I & II
P 111 Introduction to Psychology
PE 111 & 112 Physical Education I & II
PS 121 American Government and Politics

6 credit hours of history including HS 102 Western Civilization
6 credit hours of science or math electives
9 credit hours of communications electives

Communication Certificate Programs

Coordinator: Steven A. Raucher, Ph.D.

The communication department offers certificates in journalism and mass communication. For information on mass communication certificate requirements, refer to the School of Business under the communication programs. Students must complete 15 credit hours to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, if you are admitted, the credits earned may be applied toward the requirements for a degree program.

Journalism Certificate

A program designed to provide basic journalism skills in both print and broadcasting media. This certificate program may supplement information students already have, or prepare them for other areas in their current field of work. All students are required to take 15 credit hours, including the courses listed below:

Required Courses

J 101 & 102 Journalism I & II
J 201 News Writing and Reporting

2 courses from among the following:
AT 122 Layout and Printing Techniques
CO 302 Social Impact of Media
CO 307 Writing for Television and Radio
CO 308 Broadcast Journalism
CO 327 Dramatic Scriptwriting
J 202 Advanced News Writing and Reporting

Department of Economics

Chairman: Professor John J. Teluk, M.A., Free University of Munich

Professors: Phillip Kaplan, Ph.D., The Johns Hopkins University; Joseph A. Parker, Ph.D., University of Oklahoma; Alan Plotnick, Ph.D., University of Pennsylvania; Franklin B. Sherwood, Ph.D., University of Illinois

Associate Professors: George Karatzas, Ph.D., New York University; Ward Theilman, Ph.D., University of Illinois

Assistant Professor: Louis A. Huff, Ph.D., Howard University

B.A., Economics

Economics courses provide a basis for an understanding of economic structures, a wide range of domestic and international issues and trends in the economic life of modern societies. They offer training in analysis of economic problems as an aid to the evaluation of economic policies.

Introductory courses are designed to provide the foundation of economic knowledge which every citizen in a modern complex society should have in order to understand the decisions of individual economic units and the operation of a national economy as a whole. This program is designed for students planning graduate studies.

The University of New Haven also offers a B.S. in business economics. Please see the School of Business section of this catalog for more information about the bachelor of science program.

Required Courses

All students in the B.A. in economics program must complete 120 credit hours. These courses must include the core requirements for the

School of Arts and Sciences and 24 credit hours in economics, including the courses listed below:

EC 133 & 134 Principles of Economics I & II
EC 340 Microeconomic Analysis
EC 341 Macroeconomic Analysis
EC 342 International Economics
EC 410 Econometrics
EC 442 Economic Thought

3 credit hours of an elective offered by the economics department.

Minor in Economics

A total of 24 credit hours of work in economics is required for the minor in economics.

Recommended Courses

EC 133 & 134 Principles of Economics I & II
EC 340 Microeconomic Analysis
EC 341 Macroeconomic Analysis

6 credits of economics electives to be chosen from:
EC 312 Contemporary Economic Problems
EC 345 Comparative Economic Systems
EC 442 Economic Thought
QA 216 Probability and Statistics

Department of English

Chairman: Professor Paul Marx, Ph.D., New York University

Director of Freshman English: Assistant Professor, Donald M. Smith, A.M., Columbia University

Professors: Carroll P. Cole, D.F.A., Yale University; Bertrand Mathieu, Ph.D., University of Arizona; Paul Marx, Ph.D., New York University; Douglas Robillard, Ph.D., Wayne State University

Associate Professors: Srilekha Bell, Ph.D., University of Wisconsin; David E.E. Sloane, Ph.D., Duke University

Assistant Professors: Ramona Beeken, M.A., Trinity College; George Fenby, Ph.D., University of Connecticut; Bruce A. French, M.A., Harvard University; Nancyanne Rabianski, Ph.D., State University of New York at Buffalo; Donald M. Smith, A.M., Columbia University

The study of literature is at the heart of a liberal education. English and American literature taken together comprise one of the most noble monuments to man's intellect and creativity. In addition to its generally broadening effect, the study of literature will help the student to think critically and to make his writing and speaking more effective.

A major in English is looked upon very favorably by admissions officers of law, medical and dental schools. It is also good preparation for graduate work in such fields as business, education, urban planning, social work and public health. Employers in many areas of business, industry and government look favorably upon the college graduate who has both a rich background in literature and training in language. Such a person has breadth of knowledge and is able to communicate effectively.

A major in English may be taken with a concentration in either literature or writing; the two concentrations complement each other. The literature concentration stresses the development of critical appreciation of the great works in the English language; the writing concentration

stresses the growth of the student's own skill in language use. Both concentrations recognize language as the most precise, comprehensive, and powerful instrument of communication ever devised by man. Mastery of expression in English is not only the chief sign of an educated person; it is also a minimal necessity for anyone hoping to advance above modest levels of employment.

Skill in written English, in particular, is eagerly sought for and highly prized by employers in business, industry, or government. Some specific areas in which this skill has immediate, practical worth, often in terms of thousands of dollars, are journalism, advertising, public relations, sales promotion or training. Many companies hire writers and editors for company periodicals and reports, equipment handbooks and service manuals. Publishing houses provide employment, of many kinds and on many levels, for persons skilled in writing. For writers of proven ability, there are numerous opportunities to free lance profitably for trade journals, newspapers, magazines and other publications.

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, consult the Co-op Education director or your faculty advisor.

Foreign-Language Study

While study of a foreign language is not required, it is strongly recommended that the student who majors in English know at least one foreign language. Knowledge of a foreign language makes one more sensitive to the use and meaning of words in one's own language. Furthermore, knowledge of a foreign language widens one's perspective and deepens one's understanding through the insights gained into another culture. Students who are considering graduate study certainly should become competent in at least one foreign language.

So that students will become familiar with another culture, the department requires English majors to take at least one semester of Continental Literature, to be chosen from E 406-409, courses that focus on the literature of different major European cultures.

The English Club

The club is open to anyone associated with the university. Its aims are to encourage a greater love of good writing, to provide informal and diversified encounters with professional writers, and to further the literary arts on campus. In addition to sponsoring films on writers and writing, lectures by well-known contemporary writers and group excursions to plays, the English Club publishes the university's student literary magazine, *The Noiseless Spider*.

B.A., English Concentration in Literature

All students in the B.A. in English program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and 36 credit hours of English beyond the freshman level, including those courses listed below:

Required Courses

E 211 Survey of English Literature I
E 212 Survey of English Literature II
E 341 or 342 Shakespeare I or II
E 406 -409 Continental Literature (choose one course)

Six English courses, one each from groups A, B, C and D and two additional courses from groups A through E.

Group A

E 302 History of the English Language
E 323 Renaissance in England
E 362 Age of Donne and Milton
E 375 Age of Chaucer

Group B
E 353 Literature of the Romantic Era
E 356 Later 19th Century English Literature
E 371 Literature of the Neoclassic Era
E 390 English Novel I

Group C
E 361 Modern British Literature
E 391 English Novel II
E 402 Modern Poetry
E 405 Modern Drama

Group D
E 392 Poe, Hawthorne and Melville
E 393 American Transcendentalists
E 395 American Realism and Naturalism
E 405-409 Continental Literature
E 477 American Literature Between World Wars
E 478 Contemporary American Literature

Group E
E 201 & 202 The Western Tradition in Literature I & II
E 217 & 218 Survey of Black American Literature I & II
E 260 The Short Story
E 261 The Essay
E 267 Creative Writing I
E 268 Creative Writing II
E 275 Film Studies
E 281 Science Fiction
E 481-498 Studies in Literature

B.A., English Concentration in Writing

All students in the B.A. in English program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and 36 credit hours of English beyond the freshman level, including those listed below.

The term "writing skill" implies that its possessor has both ideas to express and the skill with which to communicate them. For this reason, students in the writing concentration are required to take literature courses, as well as writing courses.

Required Courses

E 220 Writing for Business and Industry
E 225 Technical Writing
E 250 Expository Writing
E 261 The Essay
E 267 & E 268 Creative Writing I & II
E 480 Internship (may be substituted for one of the writing courses)

15 credit hours of literature (courses chosen in consultation with a faculty advisor) including one course from E 406-409 continental literature.

Minor in Writing

A total of 18 credit hours of work in English is required for the minor in writing.

Required Courses

12 credit hours of writing courses.
6 credit hours of literature courses.

Minor in Literature

A total of 18 credit hours of work in English is required for the minor in literature.

Required Courses

E 211 & 212 Survey of English Literature I & II
E 213 & 214 Survey of American Literature I & II

6 credit hours of additional literature courses.

Department of Biology, Environmental Studies and General Science

Chairman: Associate Professor Dennis L. Kalma, Ph.D., Yale University

Professors: Dinwiddie C. Reams, Jr., D. Eng., Yale University; Burton C. Staugaard, Ph.D., University of Connecticut; H. Fessenden Wright, Ph.D., Cornell University

Associate Professor: Henry E. Voegeli, Jr., Ph.D., University of Rhode Island

Assistant Professors: Charles L. Vigue, Ph.D., North Carolina State University.

Biology provides one of the cornerstones of a liberal education by increasing the knowledge and appreciation of oneself and of other living organisms in the ecosphere. As a major, biology prepares the student for professional or graduate training or for technical jobs in one of the health or life-science fields.

Because of the close relationship to chemistry, physics, psychology and sociology, biology provides an area for an academic minor concentration for students majoring in these and other disciplines such as business or engineering.

Each program includes botany, zoology, microbiology, genetics and general ecology. In the B.A. and A.S. programs, one or two terms, respectively, of general biology with laboratory are required.

The upper-level course requirements of each four-year program differ and detailed listings for each program are available on request. With the consent of the student's advisor, programs may be modified to reflect the special interests of the student.

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, consult the Co-op Education director or your faculty advisor.

Honor Society

Installed at the University of New Haven is a chapter of Beta Beta Beta, the honor society in biology. Full membership requires an average of 3.0 in biological courses and 3.0 overall. Students majoring in biology with lower grades and those majoring in other areas may affiliate as associate members. The society promotes scholarship, research and intellectual experiences outside of the classroom by presenting a series of guest lecturers during the school year.

Basic Courses Required for Biology Majors

All students earning a bachelor's degree in biology must complete the core requirements for the School of Arts and Sciences, the course requirements for their particular biology program, and the basic biology courses listed below:

BI 201 Genetics
BI 220 General Ecology with Laboratory
BI 251 Zoology with Laboratory
BI 252 Botany with Laboratory
BI 301 Microbiology with Laboratory
BI 361 & 362 Biochemistry I & II
BI 591 & 592 Seminar

CH 115 & 116 General Chemistry I & II
CH 117 & 118 General Chemistry Lab I & II
CH 201 & 202 Organic Chemistry I & II
CH 203 & 204 Organic Chemistry Laboratory I & II
PH 103 & 104 General Physics I & II
PH 105 & 106 General Physics Laboratory I & II

B.A., Biology

Students earning a B.A. with a biology major must complete 122 credit hours. These courses must include the basic biology courses listed earlier in this section, the core requirements for the School of Arts and Sciences, and those additional courses listed below:

Required Courses

BI 121 General and Human Biology I
BI 131 General and Human Biology Laboratory I*
BI 303 Histology with Laboratory
BI 307 Comparative Vertebrate Anatomy with Laboratory
BI 308 General Physiology with Laboratory
BI 401 Embryology with Laboratory

3 credit hours biology/science elective
Choice of math courses M 115, M 117 or M 127.
Choice of math courses M 116, M 118 or M 228.

*Students with a good background may substitute an upper level course and begin with botany and zoology.

B.S., Biology

Students earning a B.S. with a major in biology must complete 130 credit hours. These courses must include the basic courses required for all biology majors that are listed earlier in this section, the core requirements for the School of Arts and Sciences, and those additional courses listed below:

Required Courses

BI 303 Histology with Laboratory
BI 307 Comparative Vertebrate Anatomy with Laboratory
BI 308 General Physiology with Laboratory
BI 401 Embryology with Laboratory

9 credit hours of biology electives.
Choice of math courses M 115 or M 117.
Choice of math courses M 116 or M 118.

B.S., Biology/Premed

Students earning a B.S. with a major in biology in the premedical/predental/preveterinarian program must complete 134 credit hours.

It is the most demanding of all the biological programs since it includes all the requirements of medical schools, plus the requirements of the Biology Department and the School of Arts and Sciences.

Required Courses

Course requirements include the basic courses required for all biology majors that are listed earlier in this section, the core requirements for the School of Arts and Sciences, and those additional courses listed below:

BI 303 Histology with Laboratory
BI 307 Comparative Vertebrate Anatomy with Laboratory
BI 308 General Physiology with Laboratory
BI 362 Biochemistry with Laboratory II
BI 401 Embryology with Laboratory
BI 515 Biophysics with Laboratory
CH 201 & 202 Organic Chemistry I & II
CH 203 & 204 Organic Chemistry Laboratory I & II
CH 211 Quantitative Analysis with Laboratory
M 117 & 118 Calculus I & II

B.S., Microbiology

The demand for knowledgeable people in several areas of applied microbiology has been caused by a national concern over the condition of our environment. This program is designed to address the more traditional careers in the field of microbiology as well as newly developing ones.

It will prepare people interested in medical diagnostic laboratories, pharmaceutical and food quality control, food and drug regulatory agencies, biological conversion of waste materials to useful products, industrial processes where microbes are detrimental, monitoring and improving upon water quality and waste treatment processes, and sanitation.

The program in microbiology is based upon a sound training in mathematics, biology, physics, and chemistry upon which the advanced courses in microbiology develop.

Required Courses

Students earning a B.S. with a major in biology must complete 128 credit hours. These courses must include the basic courses required for all biology majors that are listed earlier in this section, the core requirements for the School of Arts and Sciences, and those additional courses listed below:

BI 220 General Ecology with Laboratory
BI 302 Bacteriology with Laboratory
BI 304 Immunology with Laboratory
BI 325 Industrial Microbiology with Laboratory
BI 333 Medical Microbiology with Laboratory
BI 335 Food Microbiology with Laboratory
BI 506 Sanitation and Food Service

3 credit hours of biology elective.
Choice of math courses M 115, M 117 or M 127.
Choice of math courses M 116, M 118 or M 228.

B.S., Biological Illustration

This innovative program is offered by the departments of biology and art, and includes the combination of courses necessary for career advancement in this field.

Required courses

Students earning a B.S. with a major in biological illustration must complete 131 credit hours. These courses must include the core requirements for the School of Arts and Sciences and those courses listed below:

BI 210 Human Anatomy and Physiology with Laboratory
BI 251 Zoology with Laboratory
BI 252 Botany with Laboratory
BI 301 Microbiology with Laboratory
BI 303 Histology with Laboratory
BI 307 Comparative Vertebrate Anatomy with Laboratory
BI 401 Embryology with Laboratory
AT 101 & 102 Introduction to Studio Art I & II
AT 105 & 106 Basic Drawing I & II
AT 201 & 202 Painting I & II
AT 211 & 212 Design I & II
AT 231 History of Art I
AT 302 Figure Drawing
AT 304 Sculpture I
AT 309 Photographic Design
AT 322 Illustration
AT 401 & 402 Studio Seminar I & II
AT 599 Independent Study (4 credit hours)
CH 103 & 104 or CH 115 & 117
PH 103 General Physics I
SC 509 Scientific Photographic Documentation

A.S., Biology

The associate in science degree program in biology is essentially the first two years of the bachelor of arts program in biology. Many students, especially those enrolled in the Evening Division, may prefer to receive the associate degree after the completion of the first two years of study.

The A.S. degree program may be modified to provide the necessary requirements for entrance into certain types of professional degree programs, such as nursing or pharmacy. Students should meet with their adviser for further information concerning the A.S. in biology.

Required Courses

All students must complete 60 to 64 credit hours of courses to earn the associate in science degree with a biology major, including the courses listed below:

BI 121 & 122 General and Human Biology I & II
BI 131 & 132 General and Human Biology Lab I & II
BI 201 Genetics
BI 220 General Ecology with Laboratory
BI 251 Zoology with Laboratory
BI 252 Botany with Laboratory
BI 301 Microbiology with Laboratory
CH 115 & 116 General Chemistry I & II
CH 117 & 118 General Chemistry Lab I & II
E 105 Composition
E 110 Composition and Literature
P 111 Introduction to Psychology
PE 111 & 112 Physical Education I & II

1 sociology elective.
1 liberal arts elective.
Choice of math courses M 117, M 115 or M 127.
Choice of math courses M 118, M 116 or M 228.

Minor in Biology

To minor in biology, students must complete 31 credit hours, including those courses listed below. In some instances, an upper-level biology course can be substituted for general biology.

BI 121 & 131 General and Human Biology I with Laboratory
BI 201 Genetics
BI 220 General Ecology with Laboratory
BI 251 Zoology with Laboratory
BI 252 Botany with Laboratory
BI 301 Microbiology with Laboratory

A concentration in biology offers greater exposure to the study of biology than a minor, yet still allows the student to complete a major in another field. A total of 28 credit hours is required. The subjects listed under the minor must be completed plus two other upper-level courses.

Minor in Bioengineering

No rigid group of courses constitutes a minor in bioengineering. Students wishing to follow such a program should major in one aspect of engineering and take a minor (21 credit hours) or a concentration (28 credit hours) in biology; or a biology major program may be combined with a minor or concentration in engineering. Consultation with the particular engineering and biology department chairman should be made before starting the program.

Minor in Education

The B.S. program in biology provides a well-rounded science background and fulfills all the technical courses needed for the teaching certificate. Some upper-level education courses may be taken in cooperation with other institutions.

Minor in Nutrition

Students who wish to minor in nutrition must take the following courses:

BI 115 Nutrition and Dietetics
BI 116 Fundamentals of Food Science
BI 121 & 122 General and Human Biology I & II
BI 131 & 132 General and Human Biology Laboratory I & II
BI 315 Nutrition and Disease

One upper level nutrition course.

Environmental Studies

Environmentalists find employment in several diverse types of business, as well as in municipal, state and federal governmental organizations. Besides testing and control of pollutants, jobs in equipment sales, administrative positions, laboratory research jobs, work with consulting firms and as industrial environmental safety experts are some employment opportunities for those majoring in this new area. At present, employment opportunities at the entry level are good in this field.

Usually specialized training is necessary if one eventually wishes an administrative job at a high salary level. These programs are designed to enable students to enter a graduate or specialty school to continue their education. Examples of this advanced study would be a graduate program of environmental studies or engineering, a school of forestry, a program in urban ecology or a school of public health.

A master of science program in environmental studies is offered by the Graduate School. This program has both an engineering and a science option. More may be learned about this program from the Graduate School catalog.

The bachelor of science degree in environmental studies offers concentrations in the following areas: air-water control and management, environmental health and community ecology.

All students earning a bachelor's degree in environmental studies must complete the core requirements for the School of Arts and Sciences, the course requirements for their particular program, and the basic environmental studies courses listed below:

Basic Courses Required for Environmental Studies Majors

BI 220 General Ecology with Laboratory
BI 251 Zoology with Laboratory
BI 252 Botany with Laboratory
BI 301 Microbiology with Laboratory
CH 115 & 116 General Chemistry I & II
CH 117 & 118 General Chemistry Laboratory I & II
PH 103 & 104 General Physics I & II
PH 105 & 106 General Physics Laboratory

B.S., Environmental Studies Air-Water Concentration

The air-water concentration is oriented toward the engineering, chemical and biological testing, control and management of environmental pollutants.

Required Courses

Students earning a B.S. in environmental studies must complete 132 credit hours. These courses must include the basic environmental studies courses listed earlier in this section, the core requirements for the School of Arts and Sciences, and those additional courses listed below:

BI 135 Earth Science
BI 361 & 362 Biochemisry with Laboratory I & II
BI 502 Fresh Water and Marine Ecology with Laboratory

BI 510 General Environmental Health
CH 211 Quantitative Analysis with Laboratory
CH 341 Instrumental Methods of Analysis with Laboratory
SC 507 Characterization and Treatment of Wastes with Laboratory
SC 513 Environmental Pollutants with Laboratory

Choice of M 117 & 118 or M 115 & 117.
Choice of two restricted electives.
Choice of CH 201 & 202 Organic Chemistry I & II and CH 203 & 204 Organic Chemistry Laboratory I & II or CH 107 & 108 Elementary Organic Chemistry with Laboratory and IE 102 Introduction to Programming: FORTRAN.

B.S., Environmental Studies Environmental Health Concentration

The environmental health option stresses the biomedical aspects of the environmental pollutants as these affect mankind. This option provides students with the necessary background for the area of public health and that of a sanitarian.

Required Courses

Students earning a B.S. in environmental studies with a concentration in environmental health must complete 134 credit hours. These courses must include the basic environmental studies courses listed earlier in this section, the core requirements for the School of Arts and Sciences, and those additional courses listed below:

BI 115 Nutrition
BI 210 Human Anatomy & Physiology with Laboratory
BI 227 Entomology with Laboratory
BI 361 & 362 Biochemistry with Laboratory I & II
BI 501 Parasitology with Laboratory
BI 506 Sanitation and Public Health
BI 510 General Environmental Health
BI 591 Seminar
PA 101 Introduction to Public Administration
PA 390 Administrative Law
PA 490 Public Health Administration
PA 491 Public Health and Environmental Law
SO 340 Medical Sociology

Choice of psychology courses P 216 or P 336.
Choice of math courses M 117, M 115 or M 127.
Choice of math courses M 118, M 116, M 117 or M 228.
Choose one: BI 302, BI 304, BI 308, BI 315, BI 320, BI 502, BI 503, BI 519, SC 503, SC 509.

B.S., Environmental Studies Community Ecology Concentration

The community ecology program has less stress on the physical and biological sciences and on mathematics. It is sociologically oriented, and a large number of the specialty courses are in the areas of political science and public administration. Hence, this would be a useful major for one considering work in these fields or one concerned with town planning or environmental law.

Required Courses

Students earning a B.S. in environmental studies with the community ecology concentration must complete 127 credit hours. These courses must include the basic environmental studies courses listed earlier in this section, the core requirements for the School of Arts and Sciences, and those additional courses listed below:

BI 221 Human Ecology
P 321 Social Psychology
P 330 Introduction to Community Psychology
PA 101 Introduction to Public Administration

PA 390 Administrative Law
PA 490 Public Health Administration
PA 491 Public Health Law
PS 216 Urban Government
SC 135 Earth Science
SO 218 The Community
SO 410 Urban Sociology

Choice of math courses M 115 or M 117.
Choice of math courses M 116, M 118 or M 228.
EC 134 Principles of Economics II or IE 204 Engineering Economics.
BI 331 Animal Behavior or BI 524 Psychobiology.
SO 221 Cultural Anthropology or SO 312 Marriage & Family.

A.S., Environmental Studies

The associate's program is designed to lead directly into the bachelor's program if students wish to continue their studies. Evening students often prefer to obtain an associate's degree on their way to completing the requirements for the bachelor of science degree. The associate in science program provides a terminal degree for those who intend to work or already work in the environmental field, but who are trained in engineering, chemistry or business and lack the necessary background and training in biology and ecology required today in the practice of environmental control and management.

Required Courses

Students earning an associate degree in environmental science are required to complete 68 credit hours, which include first and second year courses from the core requirements for the School of Arts and Sciences and the courses listed below:

BI 220 General Ecology with Laboratory
BI 251 Botany with Laboratory
BI 252 Zoology with Laboratory
BI 301 Microbiology with Lab
CH 115 & 116 General Chemistry I & II
CH 117 & 118 General Chemistry Laboratory I & II
CH 211 Quantitative Analysis with Laboratory
M 127 Finite Math
M 228 Elementary Statistics
SC 135 Earth Science

Biology or science elective (4 credit hours).

Minor in Environmental Studies

The minor in environmental studies provides a useful background for students majoring in many other areas of study if they have concern for the environment. For example, students majoring in political science might well combine their program with a minor in environmental studies. Another useful combination is an environmental studies minor and a major in business administration or engineering.

For specific information concerning a minor in environmental studies, please consult with the department chairman.

Department of History

Chairman: Professor Joseph B. Chepaitis, Ph.D., Georgetown University

Professors: Gwendolyn E. Jensen, Ph.D., University of Connecticut; Thomas Katsaros, Ph.D., New York University

Assistant Professor: Robert A. Glen, Ph.D., University of California, at Berkeley

History provides the framework for a liberal education. The study of human experience—failures as well as achievements—is the core of historical study. It gives insight into related disciplines in the humanities and social sciences and broadens the perspective of students in professional fields of business administration and engineering, revealing the complexity and interrelatedness of human experience.

History is also excellent preparation for a variety of careers in business, government, law, journalism, foreign service and many other areas. Because of the great variety of professional programs at the University of New Haven, the student interested in history can combine this interest with highly technical professional training.

The department strives to meet its objectives by teaching not only content but critical and writing skills through reading, class presentation and discussion, research and writing. Historical methodology is stressed in all advanced courses, and students are urged to take the history seminar in their senior year to sharpen their critical and analytical skills.

Phi Alpha Theta

The University of New Haven has a chapter of the International Honor Society in History, Phi Alpha Theta, which is open to those students who have had 12 hours of history or more and have maintained an average of better than 3.0 in history courses and better than 2.9 overall. The university chapter of Phi Alpha Theta provides the students and faculty with a social and intellectual experience beyond classroom work, offering films, speakers and roundtable discussions. Students not eligible for membership in the society are welcome to participate in all of the chapter's activities.

B.A., History

All students in the B.A. in history program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and 36 credit hours of history courses, including those listed below. The balance of the program can be arranged in consultation with an advisor.

The department offers concentrations in the general program as well as in specific area studies that include American studies, European studies and economic history. A student who wishes to pursue concentrations in one of these areas should consult with an advisor for specific requirements.

Required Courses

HS 101 & 102 Western Civilization
HS 211 & 212 American History
HS 491 Senior Seminar

1 upper-division history course in each of these areas: European, American, non-Western world.

Minor in History

A total of 18 credit hours in history is required for a minor in history. These courses must include those listed below and may include any other combination of courses in history that supports the student's interests and needs.

Required Courses

HS 101 & 102 Western Civilization
HS 105 & 106 Western Economic History

Department of Humanities

Acting Chairman: Professor John Collinson, Ph.D., The Johns Hopkins University

Professors: Ralf E. Carriuolo, Ph.D., Wesleyan University

Associate Professors: Noreen Dornenburg, Ph.D., Yale University (on leave 1981-82); Michael G. Kaloyanides, Ph.D., Wesleyan University

Assistant Professor: Eric Von Magnus, Ph.D., Syracuse University

Lecturer and Theatre Coordinator: Lila Wolff-Wilkinson, M.A., Hofstra University

Philosophy

Coordinator: Professor John Collinson, Ph.D.

Since philosophy is concerned with how we understand ourselves, other human beings, and the environment, it has relevance to any activity in which people may become involved. Philosophy majors go to professional schools to study law, education and the ministry, while others go to graduate programs in philosophy and other disciplines.

Philosophy is concerned not so much with solutions to specific problems as with the kind of reasoning involved in thinking about such problems, it is an ideal minor, no matter what the person's major.

The major and minor programs in philosophy are designed to complement the students' interests so that they can obtain a humanistic education while specializing in areas that they may choose.

B.A., Philosophy

A program consisting of 30 credit hours is planned with a member of the department to meet the particular needs of the student. All courses need not be offered by the philosophy department. Since the major is flexible, students have an opportunity to vary their program and to incorporate philosophy into a double major.

Required courses

All students in the B.A. in philosophy program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and 30 credit hours of study planned in consultation with a member of the department.

Minor in Philosophy

A planned program of 15 credit hours of work which has the approval of a member of the department is required for the minor in philosophy.

Theatre Arts

Coordinator: Lila Wolff-Wilkinson, M.A.

Theatre courses may be used to satisfy the fine arts core requirements.

Productions

The university community may take part in all department productions. Volunteers may act, help with lighting, set and costume design, set construction, publicity and stage management. Participants need not be enrolled in theatre classes.

Minor in Theatre Arts

Students may complete a minor in theatre arts by taking 18 credit hours in the theatre department. They may choose from dramatic literature in theatrical contexts, production styles, directing, and acting among others. Two major productions are mounted each year by the department with opportunities for students in performance, directing and backstage work.

Required Courses

T 131 Introduction to the Theatre
T 132 Production Styles
T 141 World Drama and Theatre I
T 142 World Drama and Theatre II

6 credit hours in theatre arts, choose from: T 341 Acting, T 342 Directing, T 599 Independent Study (12 credits maximum).

World Music

Coordinator: Associate Professor Michael G. Kaloyanides, Ph.D.

The program in world music is unique. Music is studied as a worldwide phenomenon, not simply defined in the Western European art tradition. The student is encouraged to view music as a creation of all cultures and civilizations on both the folk and art levels, including our own urban and ethnic subcultures. Exposure to various music should lead the student to specialization in a particular area as an upperclassman.

Since music is a performing art, the student is expected to reach a satisfactory level of proficiency in either a traditional western instrument or one central to the particular culture in which he chooses to specialize.

A degree in world music qualifies students for professions as performers, composers, music publishers, critics and journalists, teachers, curators and librarians. Combining music with other fields, graduates may enter the fields of concert and ensemble management and sound engineering areas. There are, of course, countless performance opportunities for instrumentalists, vocalists and composers. Vocations such as music publishing, recording sales and promotions, and music criticism and journalism are also available to graduates with a degree in music. Students may also puruse careers in music education, not only as teachers in schools and conservatories but also as curators and librarians.

World music courses may be used to satisfy the fine arts core requirements.

B.A., World Music

All students majoring in the B.A. in world music program must complete 120 credit hours.

Although the program contains no language requirements, students are urged to acquaint themselves with the language of their area of concentration.

Required Courses

These courses must include the core requirements for the School of Arts and Sciences and 36 credit hours of world music including 21 credit hours from among the following courses listed below:

MU 111 Introduction to Music
MU 112 Introduction to World Music
MU 116 Performance (at least 3 credit hours must be earned)
MU 150 & 151 Introduction to Music Theory
MU 198 & 199 Introduction to American Music
MU 201 & 202 Analysis and History of European Art Music
MU 250 & 251 Theory and Composition

15 credit hours of upper-level courses (MU 299 and above) including MU 416 Advanced Performance.

Minor in World Music

A total of 15 credit hours in world music courses other than performance are required for the minor in world music. A student's program should be planned in consulation with a member of the world music faculty.

Department of Mathematics

Chairman: Associate Professor W. Thurmon Whitley, Ph.D., Virginia Polytechnic Institute and State University.

Coordinator of Precalculus Mathematics: Assistant Professor Shirley Wakin, Ph.D., University of Massachusetts

Professors: Joseph M. Gangler, Ph.D., Columbia University; Bertram Ross, Ph.D., Courant Institute, New York University; Bruce Tyndall, M.S., University of Iowa

Associate Professor: James W. Uebelacker, Ph.D., Syracuse University

Assistant Professors: Erik J. Rosenthal, Ph.D., University of California at Berkeley; Baldev K. Sachdeva, Ph.D., Pennsylvania State University

The study of mathematics opens the door to a wide variety of career opportunities and academic pursuits. Mathematics is a major part of the framework of modern science and technology. For this reason, persons with strong mathematics backgrounds qualify for stimulating occupations in an ever increasing number of fields, from private industry to government service.

The Mathematics Department offers flexible programs in mathematics and applied mathematics with concentrations in computer science and natural sciences. Students who do not take the computer science concentration are encouraged to consider a minor in computer technology in order to be better prepared for our technological society. Students also may minor in mathematics.

Mathematics students have direct access to the departmental microcomputer and the university's new Data General MV/8000 computer via numerous terminals distributed throughout the campus.

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, consult the Co-op Education director or your faculty advisor.

Mathematics Club

The Department of Mathematics sponsors the University of New Haven Mathematics Club. The club is open to all university students interested in mathematics. The club provides students and faculty the opportunity to participate together outside the classroom, in the study of mathematics and its applications. Topics range from the serious applications of mathematics to society, to such avocations as mathematically based puzzles and games. Typical activities of the club include guest lectures, field trips, films, and social events.

Basic Courses Required for All Mathematics Majors

All students earning a bachelor's degree in mathematics must complete the core requirements for the School of Arts and Sciences, the course requirements for their particular math program, and the basic math courses listed below:

M 117 & 118 Calculus I & II
M 121 Algebraic Structures
M 203 Calculus III
M 204 Differential Equations
M 231 Linear Algebra
M 361 Mathematical Modeling
M 371 Probability and Statistics I

Plus these requirements from the School of Arts and Sciences core:
EC 320 Mathematical Methods in Economics
PL 240 Philosophy of Science
SO 250 Research Methods

Refer to the School of Arts and Sciences core requirements listed earlier in this catalog for the balance of courses needed.

B.A., Mathematics

This program is designed to provide students with a broad overview of mathematics and its applications, especially for students who wish to study pure mathematics, or for those whose career objectives include mathematics education or the application of mathematics to such fields as business, economics, the social sciences and actuarial science.

Students earning a B.A. with a mathematics major must complete a minimum 124 credit hours. These courses must include the basic courses required for all mathematics majors, which are listed above, the core requirements for the School of Arts and Sciences listed earlier in this catalog, and the courses listed below:

Required Courses

M 321 Modern Algebra I
M 491 Departmental Seminar
IE 102 Introduction to Computers: FORTRAN

6 credit hours of mathematics, compatible with area of concentration, M 300 series or above.
8 credit hours of natural science with laboratories in two semester sequence.

B.S., Applied Mathematics Computer Science Concentration

This program is primarily for students interested in using computing techniques to solve mathematical problems in a wide variety of disciplines. In addition to the mathematics requirements students take eight or nine courses in computer science designed to provide training in the structure of computer languages, computing machines and computing systems.

Students in this program must complete a minimum of 125 credit hours. These courses must include the basic courses required for all mathematics majors, which are listed above; the core requirements for the School of Arts and Sciences listed earlier in this catalog, and the courses listed below:

Required Courses

M 338 Numerical Analysis
M 472 Probability and Statistics II
IE 102 Introduction to Computers: FORTRAN
IE 224 Advanced Programming
IE 320 Operating Systems
IE 334 Assembler Language

6 credit hours in computer science.
6 credit hours in mathematics, chemistry or physics.
3 credit hours in computer science, mathematics, chemistry or physics.

Courses such as Data Structures and Programming Language Structure and Translation are currently being proposed and will also be required.

B.S., Applied Mathematics Natural Sciences Concentration

This program is primarily for students whose mathematical interests are in the applications of mathematics to such fields as physics, chemistry, statistics, operations research and engineering. The students take five to seven courses in a single discipline of the natural sciences or engineering.

Students in this program must complete a minimum of 125 credit hours. These courses must include the basic courses required for all

mathematics majors, which are listed above; the core requirements for the School of Arts and Sciences listed earlier in this catalog, and the courses listed below:

Required Courses

M 321 Modern Algebra
M 338 Numerical Analysis I
M 491 Departmental Seminar
IE 102 Introduction to Computers: FORTRAN
PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory

6 credit hours of mathematics, compatible with area of concentration, M 300 series or above.

Minor in Mathematics

Students may minor in mathematics by completing six mathematics courses approved by the department. Those students contemplating a minor in mathematics should consult with the department as early as possible in their academic careers as to the choice and availability of courses.

Required Courses

M 118 Calculus II
M 203 Calculus III
M 231 Linear Algebra

9 credit hours of mathematics courses which complement the major area of interest.

Recommended Courses

M 121 Algebraic Structures I
M 204 Differential Equations or any course in the M 300 series or above.

Department of Physical Education

Chairman: Associate Professor Donald Wynschenk, M.S., Southern Connecticut State College

Associate Professors: Joseph A. Machnik, Ph.D., University of Utah; Donald Ormrod, M.S., Southern Connecticut State College; Frank Vieira, M.S., Southern Connecticut State College

Assistant Professors: Donald Burns, M.A., Teacher's College, Columbia University

The Department of Physical Education strives to serve students faced with a future abundant in leisure time in the construction of healthy alternatives to the sedentary lifestyle characteristic of today's society. The university recognizes the importance of this mission and requires two semesters of physical education for the fulfillment of degree requirements.

Courses in leisure carry-over activities such as golf, tennis, skiing, karate, badminton, racquetball, bowling, sailing, swimming, life saving, officiating, handball and paddleball are augmented by traditional programs in team sports, volleyball, modern dance, ballet, aerobics, slimnastics and the popular leisure living course which earns three credits and fulfills all physical education degree requirements.

It is hoped that the increased student interest in oriental combat and courses in recreational outdoor activities such as backpacking, camping, hiking and skiing will result in further development of course offerings. The department, as a service program, seeks to remain cognizant of the ever-changing leisure and recreational needs of university students and encourages students to creatively participate in program development.

In addition to the regular course program, the Department of Physical Education conducts a vast program of intramural competition for men and women. Tournaments in tennis, basketball, volleyball, softball, bowling, touch football, floor hockey, foul shooting and paddleball are offered. Participants should refer to the instructions in the student handbook concerning insurance and use of physical education facilities.

Physics Department

Chairman: Professor Kee W. Chun, Ph.D., University of Pennsylvania

Professors: Richard C. Morrison, Ph.D., Yale University

Assistant Professor: Francis J. Ferrandino, Ph.D., Rensselaer Polytechnic Institute

Physics is concerned with the most basic aspects of our knowledge of the natural world. It is a subject in which experiment and theory evolve constantly to provide a precise and simple description of the physical phenomena around us in terms of a relatively small number of physical laws and theories.

As the most fundamental science, physics is at the root of almost all branches of science and technology. It has provided the microscopic basis for chemistry, has stimulated important developments in mathematics, is the basis of most branches of engineering, and, during the past decade, has proved to be increasingly valuable to the life sciences.

Consequently, a basic knowledge of physics is excellent preparation for diverse careers; research in university and government laboratories, industrial research and development, applied science and engineering, biological and medical sciences, research in environmental problems, and teaching at all levels from the elementary school to the university. It also prepares students for careers in nonphysics-related fields such as philosophy, business and law.

The department offers B.A. and B.S. degrees in physics. Degree requirements are kept flexible to allow each physics major to tailor a program suited to individual career interests. The department strives to provide a well-balanced, four-year program emphasizing both the theoretical and the experimental in the broad areas of classical and modern physics.

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, consult the Co-op Education director or your faculty advisor.

B.A., B.S., Physics

All students in the B.A. or B.S. in physics program must complete 127 credit hours. These courses must include the core requirements for the School of Arts and Sciences, the course requirements for their particular physics program, and the courses listed below. The balance of the program will be worked out in consultation with a faculty advisor.

Required Courses

PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory
PH 211 Modern Physics

PH 301 Analytical Mechanics
PH 351 Intermediate Electricity and Magnetism
PH 373 Advanced Laboratory
CH 115 & 116 General Chemistry I and II
CH 117 & 118 General Chemistry Laboratory I & II
M 117 & 118 Calculus I and II
M 203 Calculus III
M 204 Differential Equations

3 credit hours of PH 401 Atomic Physics, PH 406 Solid State Physics or PH 415 Nuclear Physics.
12 credit hours of physics electives.
6 credit hours of mathematics electives.
9 credit hours of restricted electives chosen from physical science, engineering and mathematics.

Minor in Physics

A total of 20 credit hours of work in physics is required for the minor in physics. Students may select from the courses listed below or plan their program in consultation with a faculty advisor.

Recommended Courses

PH 130 Radiation Safety
PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory
PH 211 Modern Physics
PH 270 Thermal Physics
PH 280 Lasers
PH 285 Modern Optics
PH 401 Atomic Physics
PH 415 Nuclear Physics

Political Science Department

Chairman: Professor Caroline A. Dinegar, Ph.D., Columbia University

Professors: Franz B. Gross, Ph.D., Harvard University

Assistant Professors: James Dull, Ph.D., Columbia University; Natalie S. Ferringer, Ph.D., University of Virginia; Joshua H. Sandman, Ph.D., New York University

A major in political science provides the student with a foundation for a career in government on the local, state, national, and international levels; for a career in law; for graduate school programs in political science, international relations and public policy, and for careers in the areas of campaign management, communication, public relations and business. All political science and pre-law majors or minors should discuss career goals and educational objectives with a departmental advisor within one month of entrance into the program.

All students earning a B.A. in political science must complete the core requirements for the School of Arts and Sciences as well as the course requirements for the selected program in political science.

Pre-law students and prospective graduate school students, in all disciplines, are urged to take the LSAT and GRE preparation courses which are available through the Political Science Department and the Division of Special Studies.

The department participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details consult the Co-op Education director or your faculty advisor.

B.A., Political Science

All students in the B.A. in political science program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences, listed earlier in the catalog, and 48 credit hours of political science courses, including those listed below:

Required Courses

PS 121 American Government and Politics
PS 122 State and Local Government & Politics
PS 241 International Relations
PS 261 Modern Political Analysis
PS 461 Political Theory: Ancient & Medieval
PS 462 Political Theory: Modern & Contemporary
PS 499 or 500 Senior Seminar in Political Science

24 credit hours of political science electives to be chosen with student's departmental advisor.
Choice of Comparative Political Systems PS 281-PS 285 (3 credit hour elective).
Choice of M 228 Elementary Statistics or P 301 Statistics for Behavioral Sciences.

Minor in Political Science

A student may minor in the Department of Political Science by completing 18 credit hours in the program, including the courses listed below:

Required Courses

PS 121 American Government & Politics
PS 122 State & Local Government & Politics

12 credit hours of political science courses chosen in conjunction with a departmental advisor. These courses should be related to the area of student interest and concentration.

Minor in Black Studies

The black studies minor is an interdisciplinary program offered in the School of Arts and Sciences in which the Department of Political Science participates. The minor consists of courses in political science, English, history, humanities and world music. A student may minor in this program by completing 18 credit hours including courses selected from the listing below:

Suggested Courses

PS 205 The Politics of the Black Movement in America
E 217 & 218 Survey of Black American Literature I & II
HS 120 History of Blacks in America
MU 112 Introduction to World Music
MU 550 Studies in Urban Ethnic Music
P 321 Social Psychology
PL 213 & 214 Contemporary Issues in Philosophy
SO 114 Contemporary Social Problems
SO 315 Social Change
SO 400 Ethnic Dynamics
SO 410 Urban Sociology

The Institute of Law and Public Affairs

Director: Caroline A. Dinegar, Ph.D.

The Institute of Law and Public Affairs has been established to provide undergraduates with specific training in the areas of paralegal activities, public policy and public affairs. Students with an undergraduate major in any of the schools of the university may attain a paraprofessional

status in legal affairs or public affairs by completing a minor in the institute. The term paraprofessional applies to those with special training in a professional field but who do not yet possess the terminal degree normally required in the profession. In many instances, paraprofessional status is a step toward the accomplishment of the final degree.

Paralegal Studies Certificate

A certificate in paralegal studies is issued to students who complete 18 credit hours of paralegal courses. The certificate is normally supported by courses in the area of political science as well as history, psychology and sociology. The required courses are listed below:

Required Courses

†PS 238 Legal Procedure I
†PS 240 Legal Bibliography & Resources (prerequisite for PS 440)
†PS 440 Legal Research

9 additional credit hours from the courses in the Institute of Law and Public Affairs. Institute courses are designated by a dagger (†) prefix.

Minor in Legal Affairs

The legal affairs minor in the Institute of Law and Public Affairs prepares students for positions as office managers, administrative assistants, legal investigators, public policy research assistants, public policy library assistants and legislative researchers in private and public law firms and governmental agencies. Students acquire specific skills which will enable them to do important legal work under the supervision of practicing attorneys. The legal affairs minor also prepares students for positions in the judicial system and for research positions and clerkships in the law libraries of the state. Courses are selected in consultation with a faculty advisor.

Minor in Public Affairs

The public affairs minor in the Institute of Law and Public Affairs is directed towards providing training for civil service positions at all levels of government. The goal of such training is to provide more effective public administrators and to introduce creativity into the profession of public service. The public affairs minor will take a problem solving approach to the discipline as students will be conducting basic, in-depth research on problems of governmental agencies. Students in this minor will be able to develop valuable insights into the nature of the public policy process from the vantage point of the bureaucracy.

Courses are selected in consultation with a faculty advisor.

Psychology Department

Chairman: Professor Thomas L. Mentzer, Ph.D., Brown University

Professor: Robert J. Hoffnung, Ph.D., University of Cincinnati

Associate Professors: Robert D. Dugan, Ph.D., Ohio State University; Arnold Hyman, Ph.D., University of Cincinnati; David Paelet, Ph.D., University of Connecticut; Michael W. York, Ph.D., University of Maryland

Assistant Professors: Michael A. Morris, Ph.D., Boston University; Benjamin B. Weybrew, Ph.D., University of Colorado

Psychology faces the questions that are of most immediate concern to the individual: problems such as personal identity, the social context, normalcy versus deviance and behavior change. As a science, psychology is devoted to the understanding, prediction and control of behavior.

Our dedication to these goals requires that we study behavior from a number of viewpoints—development, learning, social, physiological, abnormal, personality—each fascinating in its own right. The student's attention is also drawn to the many settings in which behavior occurs, from the family to the laboratory, from the clinic to the marketplace. This great diversity ensures that the study of psychology will interrelate meaningfully with other courses in the humanities and sciences.

The undergraduate program in the department of psychology combines basic science and applications to prepare students for further professional training in psychology or for careers in human professions, law, business, education and human services delivery. Study in psychology is frequently combined with work in other programs at the University of New Haven, particularly those in sociology, political science, social welfare, management, criminal justice and biology. Courses in business and industrial psychology, psychological measurement and consumer behavior are especially useful to students preparing for careers in business or public service.

The psychology major develops skills in design and analysis of research and effective communication through the study of statistics, experimental methods, psychological measurement and psychological theory. Through involvement with behavior therapy and community psychology field work, the student can confront behavior problems in a more direct, practical fashion. The psychology department feels that it is only through a thorough grounding in basic skills and principles that students can effectively realize their own goals. The psychology program benefited in 1980 from the opening of a new psychology laboratory building on the main campus.

The new laboratory contains facilities for student and faculty research with human and animal subjects. Specialized apparatus permits the study of human and animal learning, sensory capacities, social processes, and biofeedback control.

The department also participates in the Cooperative Education program, a five-year program that enables the student to combine practical work experience with a college education. For further details, consult the Co-op Education director or your faculty advisor.

Psychology Club

Students in psychology have the opportunity to participate in the Psychology Club. Its purpose is to provide opportunities both to socialize and to develop students' interests in the science and profession of psychology. Throughout the year, the club sponsors guest lecturers and a variety of field trips. All students are welcome to join.

Psi Chi Honor Society

Membership in the university chapter of Psi Chi, the national honor society, is open to students in the top 35 per cent of their class who have completed at least nine credit hours of psychology with grades of B or better, and who are making the study of psychology one of their major interests.

Graduate Study in Psychology

The University of New Haven offers the master of arts degree in community psychology and organizational/industrial psychology as well as a senior professional certificate in applications of psychology. For descriptions of these programs, see the Graduate School catalog.

B.A., Psychology

All students in the B.A. in psychology program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences and the courses listed below:

Required Courses

P 111 Introduction to Psychology
P 301 Statistics for Behavioral Sciences

P 305 Experimental Methods in Psychology
P 321 Social Psychology
P 350 Human Assessment
Bl 121 & 122 General and Human Biology I & II
Bl 131 & 132 General and Human Biology Laboratory I & II
SO 113 Sociology

24 additional credit hours of psychology courses (only two 200-level courses may be counted toward the major).
3 credit hours of philosophy elective.
3 credit hours of mathematics, M 109 or M 127 are recommended.

Minor in Psychology

Psychology, perhaps more than any other subject, relates closely to many other disciplines. A minor is psychology prepares you for graduate study in the field and can add another dimension to your studies in other programs at the university. A total of 21 credit hours is required for a minor in psychology including the courses listed below:

Required Courses

P 111 Introduction to Psychology
P 301 Statistics for Behavioral Sciences
P 305 Experimental Methods in Psychology

12 credits of psychology (two must be at the 300-level).

Criminal Justice majors: You may substitute a 300-level psychology course for P 305. P 336 Abnormal Psychology is required.

Business Administration majors: You may substitute QA 216 for P 301.

Modules in Psychology

The psychology department has established the module as an innovative form of program enrichment for students majoring in other fields. The modules are pre-arranged sequences of four psychology courses dealing with related topics that are specially chosen to supplement other majors. Whenever possible, the module courses should be taken in the order prescribed to maximize the cumulative effect of the learning process. The modules emphasize courses related to other fields and need not incorporate the basic training skills in statistics and research methods found in the minor. The modules do not constitute adequate preparation for graduate training in psychology. Module completion is not noted on the student's transcript.

Arrange with the department office to consult with an advisor. Registration will permit access to a faculty member for advisement and will enable the department to inform the student about new courses, guest speakers, and other departmental events. Students can also consult with a departmental advisor to assemble modules uniquely tailored to their needs. The modules are as follows:

Applications in Psychology Module
P 212 Business and Industrial Psychology
P 251 Behavior Therapies
P 321 Social Psychology
P 350 Human Assessment

Social-Community Psychology Module
P 321 Social Psychology
P 330 Introduction to Community Psychology
P 331-332 Undergraduate Practicum in Community Psychology

Personal Adjustment—Mental Health Module
P 216 Psychology of Human Development
P 251 Behavior Therapies
P 336 Abnormal Psychology
P 370 Psychology of Personality

Basic Processes Module
P 216 Psychology of Human Development
P 315 Human and Animal Learning
P 361 Physiological Psychology
P 370 Psychology of Personality

Experimental Module
P 301 Statistics for Behavioral Sciences
P 305 Experimental Methods in Psychology
P 306 Psychology Laboratory
P 315 Human and Animal Learning

Sociology and Social Welfare Department

Chairman: Associate Professor Judith Bograd Gordon, Ph.D., University of Michigan

Professors: Faith H. Eikaas, Ph.D., Syracuse University; Walter O. Jewell, Ph.D., Harvard University

Associate Professors: Alfred D. Bradshaw, Ph.D., Syracuse University; Michael E. Hayes, M.S.W., Ph.D., University of Michigan; Allen L. Sack, Ph.D., Pennsylvania State University

Visiting Assistant Professor: Margaret C. Devilbiss, Ph.D., Purdue University

Sociology is the study of social life and the social causes and consequences of human behavior. Sociology's subject matter is diverse, ranging from analysis of families, corporations, hobby groups, cities, and sports to sex, death, race and other phenomena. The sociological perspective is empirically grounded and broad enough to be of relevance to those considering careers in related fields such as research, governmental service, social work, personnel work, advertising, law, medicine, journalism, social gerontology and industry.

Career preparation is one focus of the department and students will select or be assigned an academic advisor early in the major so a personalized program can be constructed.

Whether the student interest is in gaining an appreciation of the theories and methods of sociology for their own sake or in specified career preparation, a major in sociology will be of great benefit for students who become engaged both in finding out more about the social world in which we live and in applying sociology to shape both the social world and their own.

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, consult the Co-op Education director or your faculty advisor.

B.A., Sociology

All students in the B.A. in sociology program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences, listed earlier in the catalog, and 33 credit hours of sociology courses, including the courses listed below:

Required Courses
SO 113 Sociology
SO 114 Contemporary Social Problems or SO 214 Deviance

SO 250 Research Methods
SO 413 Social Theory
SO 440 Undergraduate Seminar

15 credit hours of sociology courses (9 credit hours must be 300-level or above).
3 credit hours of statistics.

Minor in Sociology

Students must take 18 credit hours to minor in sociology. Students should consult with a faculty advisor to select the nine credit hours of unspecified sociology courses. The advisor will suggest a combination of courses which focus on the student's interests and concerns. The required courses are listed below:

Required Courses

SO 113 Sociology
SO 250 Research Methods
SO 413 Social Theory

9 credit hours of sociology (two at the 300-level or above, selected with your advisor).

Minor in Anthropology

Students must take 18 credit hours to minor in anthropology. Students should consult with a faculty advisor to plan their program. The required courses are listed below:

Required courses

SO 220 Physical Anthropology and Archaeology
SO 221 Cultural Anthropology
SO 250 Research Methods or SO 450 Research Seminar

9 credit hours of anthropology.

Social Welfare

Coordinator: Michael E. Hayes, M.S.W., Ph.D.

The department offers a bachelor of arts degree with a major in social welfare which focuses on integrating a student's knowledge of the social welfare system, human behavior and the social environment, the social work profession, social research, practice skills and practice experience in preparation for beginning social work practice in a variety of settings and institutions such as state and local social service agencies, child welfare programs, group homes, crisis intervention programs, medical social work departments and police and correctional human programs. Students have been assigned responsibilities in various programs through the practice of casework, group work, social treatment, community organization, research administration and policy development.

B.A., Social Welfare

The curriculum is designed to meet the educational needs of students interested in social work careers, of students who are preparing for graduate professional education in social work, of students who wish to be informed about social welfare needs and services with a view to voluntary participation in community social welfare programs, and of students interested in preparing for graduate education in sociology or related fields such as counseling, gerontology, law, urban planning and health service administration.

All students in the B.A. in social welfare program must complete 120 credit hours. These courses must include the core requirements for the School of Arts and Sciences, listed earlier in the catalog, and a minimum of 27 credit hours of study in social welfare including two semesters (6 credit hours) in a field placement, a social service agency in the New Haven area. A professional person at the agency trains, supervises and evaluates each student. Seminars are held weekly to facilitate the integration of the theory learned in class and the practice methods used in the field. Each student masters a body of theory and applies this knowledge and skill to human problems in their field placement.

Electives are selected in consultation with an advisor and should be chosen to complement both the personal needs and professional goals of the student. The required coureses are listed below:

Required Courses

SO 113 Introduction to Sociology
SO 214 Deviance or SO 114 Contemporary Social Problems
SO 250 Research Methods
SW 220 Introduction to Social Welfare
SW 340 Group Dynamics
SW 350 Social Welfare as a Social Institution
SW 401 & SW 402 Field Instructions I and II
SW 415 & SW 416 Methods of Intervention I and II
SW 475 Issues in Social Work
P 216 Psychology of Human Development
P 301 Statistics for the Behavioral Sciences
P 336 Abnormal Psychology

3 credit hours elective

Minor in Social Welfare

Students interested in a minor in social welfare are required to complete 18 credit hours of social welfare courses including those listed below:

Required Courses

SW 220 Introduction to Social Welfare
SW 401 & 402 Field Instruction I & II
SW 415 & 416 Methods of Intervention I & II
SW 475 Issues in Social Work

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SCHOOL OF BUSINESS

Marilou McLaughlin, Ph.D., acting dean

Forty to 60 percent of the course work in the programs of the School of Business is in the arts and sciences to insure a liberal education in addition to a sound preparation for a career in business or administration. The student majoring in business administration may select one of a number of minors in the arts and sciences. This option permits the business student to undertake advanced work in an arts or science discipline. A junior or senior is required to participate in one of the practicums available in the School of Business, such as the Small Business Institute or Junior Achievement. These experiences introduce the student to the challenges of business realities before graduation.

The master of business administration, master of public administration, master of science in criminal justice, master of science in forensic science, master of science in industrial relations, master of science in accounting and master of science in taxation are primarily professional degree programs in which the major objective is to develop practitioners of business and administration. Many men and women who are enrolled are at the same time employed in various public and private organizations and are working toward their degrees on a part-time basis.

The executive master of business administration is also offered by the School of Business. The program is designed to enhance the skills and performance of participating executives through an integrated and complete educational program at the graduate level that leads to the award of a graduate degree.

Programs

Master of Business Administration

Master of Business Administration for Executives

Master of Public Administration

Master of Science

Accounting
Criminal Justice
Forensic Science
Industrial Relations
Taxation

Senior Professional Certificates

Accounting and Taxation
Economic Forecasting
Finance
General Management
International Business
Marketing
Public Management
Quantitative Analysis

Bachelor of Science

Accounting
  Financial Accounting
  Managerial Accounting
Air Transportation Management
Business Administration
Business Data Processing
Business Economics

Communication
Criminal Justice
  Law Enforcement Administration
  Correctional Administration
  Forensic Science
Economics
Finance
General Dietetics
Hotel and Restaurant Management
Institutional Food Service Administration
International Business
Law Enforcement Science
Management Science
Marketing
Operations Management
Personnel Management
Public Administration
Retailing
Security Management
Shipyard Management
Tourism and Travel Administration

Associate in Science

Business Administration
Communication
Criminal Justice
  Correctional Administration
  Law Enforcement Administration
Dietetic Technology
Executive Housekeeping Administration
Hotel and Restaurant Management
Retailing
Tourism and Travel Administration

Certificate Programs

Dietetic Technology
Executive Housekeeping Administration
Hotel and Restaurant Management
Institutional Food Service Administration
Journalism
Law Enforcement Science
Mass Communication
Retailing
Security Management
Tourism and Travel Administration

Minors

The student in the School of Business may select one of the following minors: biology, black studies, chemistry, civil engineering, communication, computer technology, economics, electrical engineering, English, fashion design, history, insurance, interior design, journalism, materials technology, mathematics, mechanical engineering, philosophy, physics, political science, psychology, public administration, real estate, sociology or world music.

With the exception of the prerequisite for the minor that may be required in the minor core, the student enrolled in the School of Business will not be allowed any more courses than required in the specific minor field. Should the student enroll for an extra course in the minor, the course will be treated as excess credit. Though a minor is granted because it offers a concentration within a discipline above the survey level, the business major must maintain as varied a selection of liberal arts courses as may be available, exclusive of electives used to fill the minor requirements. Electives that remain after the student has completed a minor must be taken in other disciplines.

Only one minor will be recognized, but a student may change that minor.

Before the end of the sophomore year, a student may select a business major and a minor after consultation with the appropriate chairman or other designated advisor. The degree program for the student's third and fourth years will be prepared in consultation with an advisor. This will involve the selection of electives in addition to the required courses. Any university course may be used as an elective.

Courses offered outside of the School of Business or the Department of Industrial Engineering of the School of Engineering must consist of not less than 40 percent of all work taken toward graduation. A minimum of 120 semester hours is required for graduation.

Admission Criteria

An applicant for admission to business administration programs must be a graduate of an approved secondary school or the equivalent. While no set program of high school subjects is prescribed, an applicant must meet the standard of the university with respect to the high school average. Applicants must present 15 acceptable units of satisfactory work, including nine or more units of college preparatory subjects. Satisfactory scores on College Entrance Examination Board Scholastic Aptitude Tests (S.A.T.) or American College Testing (A.C.T.) program tests are required.

Division of Accountancy

Director: Associate Professor Anne J. Rich, C.P.A., C.M.A., Ph.D., University of Massachusetts

Coordinator of Accounting: Assistant Professor Michael Rolleri, C.P.A., M.B.A., University of Connecticut

Coordinator of Tax and Business Law: Associate Professor Martin H. Zern, C.P.A., LL.M., New York University

Professors: William S. DeMayo, M.B.A., New York University; Kai K. Nordlund, S.J.D., New York Law School

Associate Professors: John Listro, Ph.D., University of Connecticut; Richard Reimer, C.P.A., M.S., Columbia University; Henry D. Vasileff, Ph.D., University of Toronto; Jeffrey Williams, C.P.A., C.M.A., M.B.A., University of Bridgeport

Assistant Professors: Ernest M. Dichele, C.P.A., LL.M., Boston University School of Law; Richard C. Fahringer, M.B.A., C.P.A., C.M.A., New York University; Robert Rainish, M.B.A., Bernard M. Baruch College; Michael Rolleri, C.P.A., M.B.A., University of Connecticut; Robert E. Wnek, C.P.A., LL.M., Boston University School of Law

Practitioners-in-Residence: Gerald Feldman, M.B.A., University of New Haven; Philip V. Gerdine, Ph.D., Boston University; José Oaks, C.P.A., M.B.A., New York University; Joseph A. Puleo, C.P.A., M.B.A., City College of New York

The Division of Accountancy is responsible for courses in accounting, business law, finance, and taxation. While the study of accountancy has its roots in economic theory, the courses emphasize the practical applications to real world problems.

There are many career opportunities for students in the business world, government and academia. Accounting and finance professionals are needed by consulting firms, public accounting firms, private industry, as well as by federal, state and local governments. Because of the practical orientation of the program, future business entrepreneurs can benefit by the background obtained in these programs.

The Division of Accountancy at the University of New Haven offers courses at the bachelor and master's level for the study of accounting. On the graduate level, the Division of Accountancy offers programs leading to the master of science in accounting and the master of science in taxation. The former program provides a framework for general inquiry into current accounting issues while allowing the student to pursue a concentration in financial accounting or managerial accounting. The latter program permits concentrated analysis of federal income tax law.

A concentration in accounting is also available to students enrolled in the master of business administration program.

Graduate course offerings for the study of finance may be selected to comprise a concentration in finance by the student pursuing the master of business administration degree. Complete information about the graduate program is available in the Graduate School catalog.

Accounting

The study of accounting emphasizes the economic decision-making process as well as the principles and procedures used to produce the information required by decision makers. Accounting promotes an appreciation for not only the nature of accounting information but also the use of that information in the complex process of decision making by individuals, business firms, and government. The Division of Accountancy at the University of New Haven seeks to serve the educational needs of those involved in all areas of accounting, public, private, or governmental.

Students must select from a financial accounting, or managerial accounting program of a study.

Career Minors

The Division of Accountancy offers career minors in real estate and insurance to students majoring in financial or managerial accounting. The career minor is designed to offer specialized study to those planning careers in the real estate or insurance fields. Course requirements are listed later in this section.

Accounting students may select electives from other disciplines such as computer science, economics and finance.

The Co-op Program

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

B.S., Financial Accounting

The financial accounting major is selected by those students wishing to pursue a career in public accounting leading to the Certified Public Accountant (C.P.A.) license. The integration of business law, taxation, and finance into the program provides the student with the necessary academic background to meet the challenges of the accounting profession.

Required Courses

Students earning a B.S. in accounting are required to complete 120 credit hours. These courses must include at least 36 credit hours of accounting and nine credit hours of business law, including those courses listed below:

A 111 & 112 Introductory Accounting I & II
A 221 & 222 Intermediate Financial Accounting I & II
A 223 & 224 Cost Accounting I & II
A 331 & 332 Advanced Financial Accounting I & II
A 333 & 334 Auditing Principles
A 335 & 336 Federal Income Taxation
LA 101, 102 & 103 Business Law I, II & III

B.S., Managerial Accounting

The managerial accounting major is selected by students wishing to pursue a career in private accounting as management accountants including the possible attainment of the Certificate of Management Accounting (C.M.A.). The program provides for courses at the advanced levels in finance and economics, in order to prepare the student for the kinds of decisions likely to be made within the organizational structure.

Required Courses

Students earning a B.S. in managerial accounting are required to complete 120 credit hours. These courses must include at least 33 credit hours of accounting courses and 12 hours in related subjects, including those course listed below:

A 111 & 112 Introductory Accounting I & II
A 223 & 224 Cost Accounting I & II
A 221 & 222 Intermediate Financial Accounting I & II
A 225 Advanced Managerial Accounting
A 331 Advanced Financial Accounting I
A 333 Auditing Principles
A 335 & 336 Federal Income Taxation I & II
EC 311 Government Regulation of Business
EC 341 Macroeconomic Analysis
EC 420 Applied Economic Analysis
FI 229 Corporate Financial Management
MG 350 Advanced Management
QA 333 Statistics II

B.S., Finance

Finance, as an area of study, is designed to promote an analytical appreciation of the financial system and the financial decision-making process in which society, through its individuals, business firms and governments, is continually engaged.

In particular, the study of finance provides a structured analysis of the financial system and the financial decision-making process as determinants of the economic wealth of the individual, the business firm, and the nation. The study of finance enables the student to pursue the preparation required for a number of financial decision-making positions in government and industry, including the entire variety of financial institutions.

Required Courses

Students earning a B.S. in finance are required to complete 120 credit hours. Courses must include 39 semester hours including 21 in finance, nine in economics, six in accounting, and three in quantitative analysis. Required courses are:

FI 113 Business Finance
FI 214 Principles of Real Estate
FI 229 Corporate Financial Management
FI 230 Investment Analysis and Management
FI 345 Financial Institutions and Capital Markets
A 221 & 222 Intermediate Financial Accounting I & II
EC 314 Public Finance
EC 336 Money and Banking
EC 341 Macroeconomic Analysis
QA 333 Statistics II

Minor in Computer Technology

To obtain a minor in computer technology, students must complete 18 credit hours in computers including those listed below:

IE 102 Introduction to Computers: FORTRAN
IE 224 Advanced FORTRAN Programming
IE 225 Advanced COBOL Programming
IE 231 Terminal and Remote Job Entry Systems
IE 334 Assembler Language
IE 336 Hardware Operation

Minor in Economics

To obtain a minor in economics, students must complete 18 credit hours in economics courses including those listed below:

EC 133 & 134 Principles of Economics I & II
EC 340 Microeconomics
EC 341 Macroeconomics

Choose two: EC 312, EC 442, EC 345, QA 216.

Minor in Finance

To obtain a minor in finance, students must complete 18 credit hours in finance courses including those listed below:

FI 113 Business Finance
FI 229 Corporate Financial Management
FI 230 Investment Analysis and Management
FI 345 Financial Institutions and Capital Markets

Choose two: FI 341, EC 336, EC 341.

Career Minor in Insurance

Students majoring in accounting may obtain specialized training in insurance by taking the career minor in insurance. The courses listed below are those required for this program:
FI 227 Risk and Insurance
RM 306 Life and Health Insurance
RM 402 Property and Liability Insurance
RM 404 Group and Social Insurance

Career Minor in Real Estate

Students majoring in accounting may obtain specialized training in real estate by completing the career minor in real estate. Course requirements for this program are:
FI 214 Principles of Real Estate
RE 306 Real Estate Investment and Taxation
RE 404 Real Estate Finance
RE 406 Real Estate Valuation

Department of Communication

Acting Chairman: Associate Professor Steven A. Raucher, Ph.D., Wayne State University

Professor: Marilou McLaughlin, Ph.D., University of Wisconsin

Assistant Professors: Jean Bodon, M.A., University of Alabama; Elwood Goulart, Ph.D., Indiana University

The communication programs at the University of New Haven allow students to develop their interpersonal and mass communication skills and awareness through a sequentially patterned series of course offerings.

The programs for communication majors are built around exciting studies designed for students who have a wide range of interests. Whether students envision their future in communication to be that of a television camera person, an on-the-air news broadcaster, a researcher or producer for documentary films or an investigator of why people say what they say and the effects of those utterances on society, it is the department's sincere objective to assist students in attaining their goals.

The Department of Communication works closely with many local media and with other departments in the university. Students and faculty have a close working relationship with the management and staff of WNHU-FM, the student radio station of the University of New Haven, and are involved in creating programming for the local cable television system.

Students majoring in communication at the University of New Haven will acquire the professional skills needed to enter the field after earning their undergraduate degrees. The degree programs stress development of the whole person, and allow sufficient flexibility to accommodate any communication major's career objective. Communication is a crucial and challenging responsibility in today's complex society.

The Department of Communication enjoys institutional memberships in the National Association of Educational Broadcasters, the Connecticut Broadcasters Association and the International Association of Business Communicators. Faculty members and some communication students belong to such professional organizations as the International Communication Association, the Sigma Delta Chi professional journalism society, the Speech Communication Association, the American Film Institute and the Broadcast Educators Association.

The Co-op Program

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

B.S., Communication

The student majoring in communication at the University of New Haven will have common programs with other majors for the first several terms. The initial communication courses introduce the students to the general field of interpersonal and mass communication and the processes involved in the study of human and mass interaction. With this initial orientation complete, the student is then better qualified to make an intelligent choice of major speciality within the department.

The bachelor of science degree program, offered through the School of Business, emphasizes the production and the technical aspects of film and broadcasting. The student majoring in this program is usually oriented toward programming, production, media management, on-the-air skill development and writing.

Required Courses

All students earning a B.S. in communication must complete 120 credit hours. These courses must include 36 credit hours of communication courses including those listed below:

CO 100 Human Communication
CO 101 Fundamentals of Mass Communication
CO 103 Audio in Media
CO 212 Television Production I
CO 214 Elements of Film
CO 302 Social Impact of Media

TV or film sequence:
CO 220 Film Production I
CO 312 Television Production II
CO 320 Film Production II
CO 412 Advanced Television Production

B.A., Communication

The bachelor of arts degree program, offered through the School of Arts and Sciences, normally carries a strong minor in journalism. It emphasizes the aesthetic and creative aspects of the major, and travels lightly along technical and production paths.

Required Courses

All students earning a B.A. in communication must complete 120 credit hours. These courses must include 26 credit hours of communication courses including those listed below:

CO 100 Human Communication
CO 101 Fundamentals of Mass Communication
CO 200 Theories of Group Communication
CO 208 Introduction to Broadcasting
CO 300 Persuasive Communication
CO 302 Social Impact of Media
CO 307 Writing for Television and Radio
CO 308 Broadcast Journalism
CO 340 History of Film

A.S., Communication

Upon successful completion of the first two years of the four-year bachelor of science program in communication, students may petition to receive an associate in science degree with a major in communication. Students should consult with an advisor for specific information.

Minor in Communication

A total of 18 semester hours of communication course credits must be earned in order for a student to declare the field as a completed minor area of study. This work must include CO 100 Human Communication I. The balance of the minor program is worked out in individual conference with the student and his or her communication department advisor.

Communication Certificate Programs

Coordinator: Steven A. Raucher, Ph.D.

The communication department offers certificates in journalism and mass communication. For information on journalism certificate requirements refer to the School of Arts and Sciences under the communication programs. Students must complete 15 credit hours to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, if you are admitted, the credits earned may be applied toward the requirements for a degree program.

Mass Communication Certificate

This program offers options in television production, radio production, writing for media, interpersonal communication or a combination of radio/television and film. All students are required to take 15 credit hours, including the courses listed below:

Required Courses:

CO 100 Human Communication
CO 101 Fundamentals of Mass Communication
CO 302 Social Impact of Media

Division of Criminal Justice

Director: Assistant Professor Richard E. Farmer, Ed.D., Boston University

Chairperson: Associate Professor Lynn Hunt Monahan, Ph.D., University of Oregon

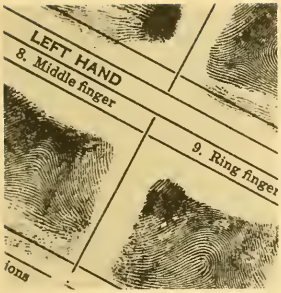
Forensic Science Program: Professor Robert E. Gaensslen, Ph.D., Cornell University, Director; Professor Henry C. Lee, Ph.D., New York University, Practitioner-in-Residence, Chief Criminalist, Connecticut State Police Forensic Laboratory

Professors: L. Craig Parker, Jr., Ph.D., State University of New York at Buffalo; Gerald D. Robin, Ph.D., University of Pennsylvania

Associate Professors: Joseph E. Hickey, Ed.D., Boston University; Robert D. Meier, Ph.D., Columbia University

Assistant Professors: Lloyd S. Goodrow, J.D., University of Connecticut; George A. Hayden, J.D., New England School of Law; David A. Maxwell, J.D., University of Miami

Practitioner-in-Residence: Professor Henry Lee, Ph.D., New York University



B.S., Criminal Justice Law Enforcement Administration

The criminal justice system is the formal mechanism of control through which social order is maintained. The study of this system is approached in an interdisciplinary manner involving law, the physical sciences and the social sciences. Through the use of both conventional and innovative techniques, including lectures, written assignments, seminars, workshops, internships, and independent research and study, an attempt is made to provide students with the opportunity to gain a wide variety of insights and experiences.

There is a full range of career opportunities available in criminal justice at the local, state and national levels. Because of its interdisciplinary approach, the study of criminal justice fills the needs of students seeking careers in teaching, research, and law, and of the inservice personnel seeking academic and professional advancement.

The Division of Criminal Justice at the University of New Haven offers courses from the associate to the master's level. Complete information about the master of science degree in criminal justice is available in the graduate catalog.

Undergraduate study of criminal justice concentrates on five major areas of study, enforcement administration, correctional administration, forensic science, law enforcement science, and security management.

The Co-op Program

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

This program prepares students for careers in federal, state and local law enforcement agencies, public and private security forces, planning agencies and other related settings. The curriculum focuses on the roles, activities and behaviors of people with regard to maintaining law and order, providing needed services, protecting life and property, planning and research.

Required Courses

Students earning the B.S. in criminal justice—law enforcement administration must complete 122 credit hours, including those courses listed below:

CJ 101 Introduction to Criminal Justice
CJ 102 Criminal Law
CJ 201 Principles of Criminal Investigation
CJ 205 Interpersonal Relations
CJ 215 Introduction to Forensic Science
CJ 217 & 218 Criminal Procedures and Evidence I & II
CJ 221 Juvenile Justice
CJ 300 Foundations of Justice
CJ 301 Group Dynamics in Criminal Justice

CJ 311 Criminology
CJ 400 Criminal Justice Problems Seminar
CJ 402 Police in Society
CJ 501 Criminal Justice Internship
E 105 Composition
E 110 Composition and Literature
IE 346 Statistical Analysis
IE 507 Systems Analysis
M 217 Finite Mathematics
P 111 Psychology
P 336 Abnormal Psychology
PA 101 Public Administration
PE 111 & 112 Physical Education I & II
PS 121 American Government and Politics
PS 332 Constitutional Law
SO 113 Sociology
SO 250 Research Methods

Choice of IE 102, IE 105 or IE 107.
Two natural or physical science courses with laboratory.
One philosophy course.
15 credit hours restricted electives chosen with advisor.

B.S., Criminal Justice Correctional Administration

This program is designed to prepare students for careers with federal, state, local and private correctional agencies and institutions. It is concerned with the treatment of offenders, administration, planning and research. The curriculum emphasizes law, social and behavioral sciences and research methodology.

Required Courses

Students earning the B.S. in criminal justice—correctional administration must complete 122 credit hours, including those courses listed below:

CJ 101 Introduction to Criminal Justice
CJ 102 Criminal Law
CJ 205 Interpersonal Relations
CJ 209 Correctional Treatment Programs
CJ 217 & 218 Criminal Procedures and Evidence I & II
CJ 221 Juvenile Justice
CJ 300 Foundations of Justice
CJ 301 Group Dynamics in Criminal Justice
CJ 311 Criminology
CJ 400 Criminal Justice Problems Seminar
CJ 408 Correctional Counseling
CJ 501 Criminal Justice Internship
E 105 Composition
E 110 Composition and Literature
IE 346 Statistical Analysis
IE 507 Systems Analysis
M 127 Finite Math
P 111 Introduction to Psychology
P 336 Abnormal Psychology
P 370 Psychology of Personality
PE 111 & 112 Physical Education I & II
PS 121 American Government and Politics
PS 122 State and Local Government and Politics
PS 332 Constitutional Law
SO 113 Sociology
SO 250 Research Methods

Choice of IE 102, IE 105 or IE 107.
Two laboratory courses in the natural or physical sciences.
One course in philosophy.
15 hours restricted electives chosen with advisor.

B.S., Criminal Justice Forensic Science

Forensic Science is a broad field in which physical and biological sciences are utilized to analyze and evaluate physical evidence related to matters of law. The aim of the program is to provide the appropriate education to men and women in the field of forensic science, as well as those who are planning careers in forensic sciences. The curriculum is also of value to those in related fields whose professional work requires knowledge of scientific investigation methods.

Required Courses

Those students earning a B.S. in criminal justice—forensic science must complete 130 credit hours, including those courses listed below:

CJ 101 Introduction to Criminal Justice
CJ 102 Criminal Law
CJ 201 Principles of Criminal Investigation
CJ 215 Introduction to Forensic Science
CJ 303 & 304 Forensic Science Laboratory I & II
CJ 311 Criminology
CJ 402 Police in Society
BI 121 & 122 General and Human Biology I & II
BI 131 & 132 General and Human Biology Laboratory I & II
BI 320 Forensic Medicine
BI 320 Forensic Medicine
BI 362 Biochemistry with Laboratory II
CH 105 & 106 General Chemistry with Laboratory I & II
CH 211 Quantitative Analysis with Laboratory
CH 301 & 302 Organic Chemistry with Laboratory I & II
CH 341 Instrumental Methods of Analysis with Laboratory
E 105 Composition
E 110 Composition and Literature
M 115 Pre-Calculus Mathematics
M 116 Survey of Calculus
PH 104 General Physics
PH 106 General Physics with Laboratory
SC 509 Scientific Photographic Documentation
SO 113 Sociology

Choice of CJ 300 or IE 107.
Choice of BI 303 or BI 503.
Choice of BI 304 or BI 401.
18 credit hours of restricted electives chosen with advisor.

B.S., Law Enforcement Science

This program is designed to provide an interdisciplinary educational program for those people entering law enforcement science fields, especially detective work. In addition, it is geared toward enhancing the scientific knowledge of those people now holding investigative positions in various enforcement agencies. The curriculum emphasizes law enforcement, forensic science, natural and physical science, mathematics, industrial engineering and the behavioral sciences.

Required Courses

Students earning a B.S. in law enforcement science must complete 122 credit hours, including those courses listed below:

CJ 101 Introduction to Criminal Justice
CJ 102 Criminal Law
CJ 201 Principles of Criminal Investigation
CJ 204 Forensic Photography with Laboratory
CJ 205 Interpersonal Relations
CJ 215 Introduction to Forensic Science
CJ 217 & 218 Criminal Procedures and Evidence I & II
CJ 227 Fingerprints with Laboratory
CJ 303 & 304 Forensic Science Laboratory I & II
CJ 311 Criminology
CJ 400 Criminal Justice Problem Seminar

CJ 402 Police in Society
CJ 415 Document and Firearms Examination
CJ 416 Seminar in Forensic Science
CJ 501 Criminal Justice Internship
E 105 Composition
E 110 Composition and Literature
M 127 Finite Math
M 228 Elementary Statistics
P 111 Introduction to Psychology
PE 111 & 112 Physical Education I & II
PS 121 American Government and Politics
PS 332 Constitutional Law
SO 113 Sociology

Two laboratory courses in natural or physical sciences.
One philosophy course.
15 credit hours restricted electives chosen with advisor.

B.S., Security Management

The program in security management is designed to provide those entering or now holding administrative or managerial positions in private security the necessary skills and know-how to perform effectively and professionally. The program is interdisciplinary in nature and draws from the areas of criminal justice, forensic science, business administration, industrial engineering and the behavioral sciences.

Required Courses

Students earning a B.S. in security management must complete 120 credit hours, including those courses listed below:

CJ 101 Introduction to Criminal Justice
CJ 102 Criminal Law
CJ 105 Introduction to Security
CJ 201 Principles of Criminal Investigation
CJ 203 Security Administration
CJ 205 Interpersonal Relations
CJ 215 Introduction to Forensic Science
CJ 217 & 218 Criminal Procedures and Evidence I & II
CJ 226 Industrial Security
CJ 306 Security Problems Seminar
CJ 311 Criminology
CJ 410 Legal Issues in Private Security
CJ 416 Seminar in Forensic Science
CJ 501 Criminal Justice Internship
A 111 Introduction to Accounting
E 105 Composition
E 110 Composition and Literature
FS 202 Principles of Fire Science Technology
FS 402 Arson Investigation I
IE 223 Personnel Administration
LA 101 Business Law
MG 125 Management and Organization
MG 200 Business Systems Analysis
P 111 Introduction to Psychology
P 212 Business and Industrial Psychology
PS 332 Constitutional Law
QA 118 Business Mathematics
QA 128 Quantitative Analysis
QA 216 Probability and Statistics
SH 100 Safety Organization and Management
SH 400 Occupational Safety and Health Legal Standards
SO 113 Sociology

Two courses in natural or physical sciences.
One philosophy course.

A.S., Criminal Justice Law Enforcement Administration

Students completing the first two years of the bachelor of science degree program in criminal justice—law enforcement administration (62 credit hours) are eligible to receive the associate in science degree. Interested students should contact their advisor.

A.S., Criminal Justice Correctional Administration

Students completing the first two years of the bachelor of science degree program in criminal justice—correctional administration (62 credit hours) are eligible to receive the associate in science degree. Interested students should contact their advisor.

Minor in Criminal Justice

To minor in criminal justice, students must complete 18 credit hours of criminal justice courses, including those listed below:

CJ 101 Introduction to Criminal Justice
CJ 102 Criminal Law

Criminal Justice Certificate Programs

Coordinator: Richard Farmer, Ed.D

The division of criminal justice offers certificates in law enforcement science and security management. Students must complete 18 credit hours of required courses to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, if you are admitted, the credits earned may be applied toward the requirements for a degree program.

Law Enforcement Science Certificate

Designed to provide the fundamentals of criminal investigation techniques and procedures, particularly for those involved in or planning to enter investigative positions in law enforcement agencies in both the private and public sectors. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

CJ 201 Principles of Criminal Investigation
CJ 215 Introduction of Forensic Science
CJ 227 Fingerprints with Laboratory
CJ 303 & 304 Forensic Science Laboratory I and II
CJ 415 Document and Firearms Examination

Security Management Certificate

A concentrated program of study in management security systems for private business and industry. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

CJ 105 Introduction to Security
CJ 112 Security Methods
CJ 203 Security Administration
CJ 226 Industrial Security
FS 402 Arson Investigation I
SH 100 Safety Organization and Management

Department of Economics

Chairman: Professor John J. Teluk, M.A., Free University of Munich

Professors: Phillip Kaplan, Ph.D., The Johns Hopkins University; Joseph A. Parker, Ph.D., University of Oklahoma; Alan Plotnick, Ph.D., University of Pennsylvania; Franklin B. Sherwood, Ph.D., University of Illinois

Associate Professors: George Karatzas, Ph.D., New York University; Ward Theilman, Ph.D., University of Illinois

Assistant Professor: Louis A. Huff, Ph.D., Howard University

Economics courses provide a basis for an understanding of economics structures, a wide range of domestic and international issues and trends in the economic life of modern societies. Economics courses offer training in analysis of economic problems as an aid to the evaluation of economic policies.

Introductory courses are designed to provide the foundation of economic knowledge which every citizen in a modern complex society should have in order to understand the decisions of individual economic units and the operation of a national economy as a whole.

Advanced courses are designed primarily for economics and business majors. They cover in depth specific economic topics. They also attempt to prepare students for economic research and management positions in financial institutions, individual organizations, government or graduate study and teaching.

The Department of Economics has two major objectives: to function as a service department for other departments in the School of Business Administration and other schools of the university and to offer a specialized education to students majoring in economics.

Students majoring in economics may choose either a bachelor of science in business economics degree or a bachelor of arts in economics degree.

B.S., Business Economics

The University of New Haven program in business economics is designed to prepare students for research or executive positions in business or government.

Required Courses

Students earning a B.S. in business economics must complete 120 credit hours. These courses must include 24 credit hours of economics courses including those listed below:

EC 133 & 134 Principles of Economics I & II
EC 320 Mathematical Methods in Economics
EC 336 Money and Banking
EC 341 Macroeconomic Analysis
EC 350 Economics of Labor Relations
EC 420 Applied Economic Analysis

3 credit hours of economics elective.

B.A., Economics

The university's program in economics for a B.A. in economics is designed for students planning graduate studies in the field.

Required Courses

Students earning a B.A. in economics must complete 120 credit hours. These courses must include 24 hours of economics courses including those listed below:

EC 133 & 134 Principles of Economics I & II
EC 340 Microeconomic Analysis
EC 341 Macroeconomic Analysis
EC 342 International Economics
EC 410 Econometrics
EC 442 Economic Thought

3 credit hours of economics elective.

Minor in Economics

Eighteen credit hours of economics courses are required for a minor including those listed below:

EC 133 & 134 Principles of Economics I & II
EC 340 Microeconomic Analysis
EC 341 Macroeconomic Analysis

Two other courses chosen from:
EC 312 Contemporary Economic Problems
EC 345 Comparative Economic Systems
EC 442 Economic Thought
QA 216 Probability and Statistics

Department of Hotel/Restaurant Management, Dietetics and Tourism Administration

Chairman: Associate Professor Ronald A. Usiewicz, Ph.D., Kent State University

Practitioner-in-residence: Bonnie Tandy Lablang, R.D., M.S., Case Western Reserve University

Hotel, food service, dietetic and travel professionals have careers that are challenging and rewarding. The development of this expanding industry offers exciting job opportunities ranging from the management of small restaurants to directing large hotel and resort complexes. Varied employment possibilities in the U.S. and abroad range from small towns to major cities and from seashore to ski country.

The food service industry has expanded rapidly in the past half century, especially in the last two decades, and ranks first in volume of sales among all retail outlets in the United States. A conservative estimate is that one of every three meals is planned, prepared, and served outside the family home. The food service industry is broad in scope and varies from systems such as highly competitive and expensive restaurants and hotels to a multiplicity of fast and less costly food outlets such as schools, universities, and hospitals with conservative budgets.

Hotel management offers outstanding personal and financial rewards. The diversified knowledge required in the management and operation of the modern hotel or motel demands a broad and varied professional background. The program in hotel management is designed to assist the student in his or her preparation for a rewarding career in this demanding profession. Currently, some 780,000 persons are employed in America's 68,000 lodging facilities.

Tourism and travel activities are major national resources for many nations. Travel patterns often affect the construction of new facilities and most countries and states have major programs to expand tourism within their boundaries. The tourism and travel major studies the history, routes, equipment, the development of national and international carriers, and the application of scientific management techniques to these challenging aspects of the profession. The department offers tourism and travel electives which partially meet certification requirements for C.T.C. (Certified Travel Counselor) from the Institute of Travel Agents (I.C.T.A).

Institutional Food Service Administration careers are focused toward mass volume feeding in schools, universities, hospitals and other health care facilities, residences for children and retirees, camps, community centers, transportation, armed forces, industrial plants, and correctional units. The efficient management and supervision of such an extensive array of food service systems offers an almost unlimited challenge to students to prepare themselves academically and practically to assume responsibilities in the hospitality industry.

Dieticians are specialists educated for a profession responsible for the nutritional care of individuals and groups. This care includes the application of the science and care of human nutrition in helping people elect and obtain food for the primary purpose of nourishing their bodies in health or disease throughout the life cycle. This participation may be in single or combined functions; in food service systems management; in extending knowledge of food and nutrition principles; in teaching these principles for application according to particular situations; or in dietary counseling.

Transfer Credit

The Department of Hotel/Restaurant Management, Dietetics and Travel Administration is interested in the further educational and professional development of students with transcripts from junior, senior, and community colleges, plus professional schools such as Johnson and Wales. A transfer credit policy for students transferring from a properly accredited school has been developed and will be furnished upon request. Special provisions have also been developed for applicants holding the baccalaureate degree in some other discipline.

Hotel, Restaurant and Tourism Club

The purpose and functions of the Hotel, Restaurant and Tourism Club are: to promote and develop professionalism in the hospitality industry; to provide special services to clientele in order to support club operations and professional functions; to attend national conferences, expositions, hotel/restaurant shows and seminars; and to provide a means of fellowship and camaraderie among students enrolled in programs of hospitality, dietetics, and tourism administration. Students are urged to become members of the club and participate in the numerous social and academic functions throughout the year.

The Co-op Program

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

B.S., Tourism and Travel Administration

A student earning a bachelor of science degree in tourism and travel administration studies international economics, geography and the social and cultural patterns that have shaped the development of the tourism and travel industry. Students receive internship training opportunities at travel agencies, airlines and convention bureaus throughout New England.

It is suggested that students enrolled in the tourism and travel administration major choose a minor in anthropology or a foreign language.

Required Courses

A minimum total of 120 credit hours must be completed for the bachelor of science degree in tourism and travel administration. In addition to the requirements of the associate in science degree, this program includes the following courses:

HM 212 Laws of Innkeeping
HM 300 Special Topics
HM 304 Cultural Understanding of Foods and Cuisines
HM 326 Personnel Management in Hotels and Restaurants
HM 410 Hospitality Systems and Operations
HM 411 Equipment, Layout and Design
HM 480 Wholesale Tour Systems
HM 510 Field Experience (800 hours work experience required)
HM 512 Seminar in Hotels, Restaurants and Institutions
HM 599 Independent Study

B.S., General Dietetics

The university's program in general dietetics is designed for the student seeking a career as a registered dietician (R.D.). The program emphasizes administrative dietetics, which is the management of food service systems.

Students who earn the B.S. in general dietetics may apply for membership in the American Dietetics Association. A student who completes professional training—in an approved internship program, through extended work experience under the supervision of a registered dietician, or by completion of an accredited master's degree program—and passes a registration examination becomes a registered dietician.

It is suggested that students enrolled in the general dietetics program choose a minor in nutrition, chemistry or biology.

Required Courses

Students must complete the course requirements for the A.S. in dietetic technology listed later in this section. A total of 126 credit hours are required for the B.S. degree including those courses listed below:

HM 202 Volume Food Purchasing
HM 304 Cultural Understanding of Foods and Cuisines
HM 326 Personnel Management in Hotels, Restaurants and Institutions
HM 411 Food Service Equipment and Layout Design

B.S., Hotel and Restaurant Management

A student earning a bachelor of science degree in hotel and restaurant management is able to focus on the development of those managerial skills, abilities and competencies essential to all professional managers, with specific concentration on those characteristics needed for managing hotels, restaurants and related operations.

It is suggested that students enrolled in the program choose a minor in psychology, nutrition or foreign language.

Required Courses

To receive a B.S. in hotel and restaurant management, students must complete 120 credit hours. These courses must include the course requirements for the A.S. in hotel and restaurant management, which are listed later in this section, and the courses listed below:

HM 204 Volume Food Production and Service II
HM 210 Hotel Front Office Systems
HM 220 Food Service Management Systems IV
HM 304 Cultural Understanding of Foods and Cuisines
HM 321 Hotel and Restaurant Accounting and Auditing
HM 322 Hospitality Marketing and Sales Promotion
HM 325 Food and Labor Cost Controls
HM 326 Personnel Management in Hotels, Restaurants and Institutions

HM 330 Institutional Environmental Services and Housekeeping
HM 410 Hospitality Systems and Operations
HM 411 Food Service Equipment and Facilities Design
HM 510 Field Experience (800 hours work experience required)
HM 512 Seminar in Hotel, Restaurants and Institutions

B.S., Institutional Food Service Administration

A student earning a bachelor of science degree in institutional food service administration is able to focus on the development of those managerial skills, competencies and abilities essential to all professional managers, with specific concentration in those areas characteristic of institutional feeding. Mass feeding on an institutional basis can be divided into four major areas of the food service industry: college and university, business and industry, health care (hospitals) and governmental installations (such as penal institutions), and nursing homes and community nutrition.

It is suggested that students enrolled in the institutional food service administration major choose a minor in nutrition, chemistry or biology.

Required Courses

Students must complete 122 credit hours to receive the bachelor of science in institutional food service administration. Their courses must include those listed below:

HM 100 Introduction to the Hotel and Restaurant Industry
HM 202 Volume Food Purchasing
HM 204 Volume Food Production and Service II
HM 212 Laws of Innkeeping
HM 300 Special Topics
HM 304 Cultural Understanding of Foods and Cuisines
HM 322 Marketing and Sales
HM 325 Food and Labor Cost Control
HM 326 Personnel Management in Hotels, Restaurants and Institutions
HM 330 Institutional Environmental Services and Housekeeping
HM 410 Hotel, Restaurant and Institutional Systems and Operations
HM 411 Food Service Equipment, Layout and Design
HM 510 Field Experience
HM 512 Seminar in Hotels, Restaurants and Institutions
HM 599 Independent Study in Hotels, Restaurants and Institutions

A.S., Dietetic Technology

Dietetic technicians occupy key supervisory roles in major hospitals and other care facilities, where they work under the direction of registered dieticians. In smaller hospitals, technicians undertake key management roles where they often head the dietary department under the periodic supervision of a consulting registered dietician.

One of the most important areas of opportunity for dietetic technician is extended care facilities, such as nursing homes, where the technician serves as food service manager under the supervision of a consulting registered dietician.

The dietetic technician program at the University of New Haven has full accreditation from the American Dietetics Association. Those who receive the A.S. degree in dietetic technology may continue on towards their B.S. degree in general dietetics at UNH.

Required Courses

To complete the A.S. degree, in dietetic technology, students must complete 69 credit hours including the courses listed below:

HM 200 Volume Food Production and Service I
HM 202 Volume Food Purchasing
HM 214, 216, 218, 220 Food Service Management Systems I-IV
HM215, 217, 219, 221 Supervised Field Experience/
Management Systems I-IV
HM 321 Accounting and Auditing

A.S., Executive Housekeeping Administration

Students completing the associate degree will be eligible for membership in the Housekeeping Association of America.

Required Courses

The executive housekeeping administration major must complete the following requirements for the associate in science degree for a total of 60 credit hours.

HM 100 Introduction to the Hotel and Restaurant Industry
HM 210 Front Office Procedures
HM 212 Laws of Innkeeping
HM 321 Hotel and Restaurant Accounting and Auditing
HM 326 Personnel Management in Hotels, Restaurants and Institutions
HM 330 Institutional Environmental Services and Housekeeping
HM 510 Field Experience (800 hours required)
HM 599 Independent Study

A.S., Hotel and Restaurant Management

A student may obtain an associate degree in hotel and restaurant management then continue at the University of New Haven and receive the B.S. in hotel and restaurant management.

Required Courses

Students earning the A.S. in hotel and restaurant management must complete 60 credit hours including the courses listed below:

HM 100 Introduction to the Hotel and Restaurant Industry
HM 165 Principles of Tourism and Travel
HM 200 Volume Food Production and Service I
HM 202 Volume Food Purchasing
HM 204 Volume Food Production Service II
HM 212 Laws of Innkeeping
HM 304 Cultural Understanding of Foods
HM 321 Hotel and Restaurant Accounting and Auditing
HM 322 Hospitality Marketing and Sales
HM 599 Independent Study

A.S., Tourism and Travel Administration

A student may obtain an associate degree in tourism and travel administration, then continue at the University of New Haven and earn a bachelor of science degree in the field.

Required Courses

The tourism and travel administration major must complete 60 credit hours including the courses listed below:

HM 100 Introduction to the Hotel and Restaurant Industry
HM 165 Principles of Tourism and Travel
HM 166 Touristic Geography
HM 267 Shipping and Cruises
HM 268 Land Transportation and Reservation Procedures
HM 321 Hotel and Restaurant Accounting and Auditing
HM 322 Marketing and Sales Promotion
HM 369 Travel Agency Management
HM 370 Airline Transportation and Reservation Procedures

Hotel/Restaurant Management, Tourism Administration Certificates

Coordinator: Dr. Ronald Usiewicz, Ph.D.

The department offers certificates in dietetic technology, executive housekeeping administration, hotel and restaurant management, insti-

tutional food service administration and tourism and travel administration. Students must complete 18 credit hours of required courses to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, if you are admitted, the credits earned may be applied toward the requirements for a degree program.

Dietetic Technology Certificate

Specifically designed for those food service workers in hospitals, nursing homes and health care institutions to increase the food service employee's productivity, knowledge and competence in the production kitchen. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

HM 200 Volume Food Production and Service I
HM 214 Food Service Management Systems I
HM 216 Food Service Management Systems II
HM 218 Food Service Management Systems III
HM 220 Food Service Management Systems IV
HM 326 Personnel Management in Hotels, Restaurants and Clubs

Executive Housekeeping Administration Certificate

For individuals who wish to increase their current skills in housekeeping administration and/or assume middle supervisory positions. Career options include positions with housekeeping departments of hotels, motels, resorts, clubs and lodging facilities. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

HM 210 Hotel Front Office Systems
HM 321 Hotel Accounting and Auditing
HM 325 Food and Labor Cost Controls
HM 326 Personnel Management in Hotels, Restaurants and Institutions
HM 330 Institutional Environmental Services and Housekeeping
HM 410 Hotel, Restaurant and Institutional Systems and Operations

Hotel and Restaurant Management Certificate

This program is designed for those professionals currently employed in hotels, motels, resorts, clubs and other areas of food service, excluding institutional, who wish to increase their knowledge and skills leading to a supervisory position in this growing field. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

HM 304 Cultural Understanding of Foods and Cuisines
HM 321 Hotel, Restaurant and Institutional Accounting and Auditing
HM 325 Food and Labor Cost Controls
HM 326 Personnel Management in Hotels, Restaurants and Institutions
HM 330 Institutional Environmental Services and Housekeeping
HM 410 Hotels, Restaurants and Institutional Systems and Operations

Institutional Food Service Administration Certificate

Developed for food service personnel presently employed in institutional food service operations. The program builds supervisory skills for hospital, college, nursing home, university, health care center and correctional institution food service departments. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

HM 202 Volume Food Purchasing
HM 325 Food and Labor Cost Controls
HM 326 Personnel Management for Hotels, Restaurants and Institutions
HM 330 Institutional Environmental Services and Housekeeping
HM 410 Hotel, Restaurant and Institutional Systems and Operations
HM 411 Food Service Equipment, Layout and Design

Tourism and Travel Administration Certificate

Designed for those currently working in or who are planning to be employed in the tourism industry. The program may prepare the individual for middle-supervisory positions at travel agencies, tour-package ticket agencies, airline and land transportation installations. All students are required to take 18 credit hours, including the courses listed below:

Required Courses

HM 165 Introduction to Tourism and Travel Administration
HM 166 Touristic Geography
HM 267 Shipping and Cruises
HM 268 Land Transportation and Reservation Procedures
HM 269 Travel Agency Administration
HM 370 Airline Transportation and Reservation Procedures

Department of Management Science

Chairman: Associate Professor Ronald N. Wentworth, Ph.D., Purdue University

Professors: Wilfred R. Harricharan, Ph.D., Cornell University; Shiv Sawhney, Ph.D., New York University; Frank Scalia, Ph.D., Carnegie-Mellon University

Associate Professors: Gene F. Brady, Ph.D., University of Oregon; John Fitzmartin, Ph.D., University of Pittsburgh; Martin Katz, D.B.A., Kent State University; William Pan, Ph.D., Columbia University; Warren J. Smith, M.B.A., Northeastern University

Assistant Professors: Frank F. Flaumenhaft, M.B.A., New York University; John Moore, Ph.D., Southern Illinois University; Barbara Taylor, M.S.B.A, University of Massachusetts

At a time in history when all of society's systems—governmental, technological, societal, educational, industrial and military as well as business—are becoming more sophisticated and complex, the need for skilled managers has never been greater. As automation frees people from having to deal directly with materials and the computer frees them from the burden of processing data, today's managers are able to direct their energies to supervision, administration, control and planning—the four major functions of management.

The Department of Management Science seeks to provide students with the foundations of knowledge and skill necessary for moving to positions of responsibility in management. The theories and methods of analyzing decisions that are studied prepare students for entry-level jobs, as well as sharpen the skills of those already holding organizational positions. The underlying concept is to combine adequate specialization with the integrative point of view required of the manager.

The Department of Management Science offers degree programs in the following areas of specialization: an associate in science degree program in business administration and bachelor of science degree programs in air transportation management, business administration, business data processing, management science, operations management and personnel management. The department also offers a career minor in shipyard management.

Society for the Advancement of Management

The Department of Management Science sponsors a student chapter of the Society for the Advancement ot Management (SAM), which is open to students interested in the art and science of professional management. The student chapter of SAM provides students and faculty with a professional and social experience that cannot be found in the classroom. Speakers, films, discussion groups and other activities are scheduled and are open to all those interested in attending.

The Co-op Program

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

Basic Business Curriculum

Students earning bachelor of science degrees in the Department of Management Science must complete the basic business curriculum shown below, plus the course requirements for their particular business program.

A 111 & 112 Introductory Accounting I & II
E 105 Composition
E 110 Composition and Literature
EC 133 & 134 Principles of Economics I & II
IE 105 Introduction to Computers: COBOL
LA 101 Business Law
MG 125 Management and Organization
MK 105 Marketing
PE 111 & 112 Physical Education I & II
QA 118 Business Math
QA 128 Quantitative Techniques
QA 216 Statistics

B.S., Air Transportation Management

The aviation industry attracts individuals from many diverse backgrounds with a variety of skills. Many dynamic career opportunities exist for students interested in aviation. These include: professional pilot, as well as various aspects of management and engineering in general aviation, government, airlines and manufacturing.

The bachelor of science degree in air transportation management provides the student selecting the flight option with the technical aviation background required of the professional pilot. A strong foundation of management and specific aviation management courses providing knowledge and skills required of pilots and executives in the aviation industry is an integral part of this program.

A two-year associate in science degree in aeronautical technology is also offered by the University within the School of Professional Studies and Continuing Education.

Required Courses

Students earning the B.S. in air transportation management must complete 120 credit hours or 130 hours if the flight option is chosen. (Flight option courses are marked *). These courses must include the basic business curriculum listed earlier in this section and the courses listed below:

AE 100 Aviation Science—Private
AE 105 Primary Flight—Solo *
AE 110 Aviation Meterology
AE 115 Private Pilot Flight *
AE 130 Aviation Science—Commercial
AE 135 Commercial Flight I *
AE 140 Concepts of Aerodynamics
AE 145 Commercial Flight II *

AE 200 Aviation Science—Instrument
AE 205 Commercial Flight III *
AE 210 Aircraft Powerplants, Systems and Components
AE 230 Flight Instructor Seminar
AE 235 Instructor Flight or AE 245 Multi-Engine Rating*
AE 310 Air Transportation Management
AE 400 Airport Management
AE 410 Corporate Aviation Management
AE 430 Aviation Safety Seminar
HS 102 Western Civilization
MG 350 Advanced Management
MK 470 Business Logistics

Four business concentration electives.
M 115 & 116 may substitute for QA 118 & 128.

B.S., Business Administration

In order to function effectively in a variety of management situations, administrators should be conversant with all major areas of management. Moreover, they should have a thorough understanding of the interrelationships which exist among the different functional groups within organizations. This point of view is essential for managers who are to participate effectively with others in the administrative group and who are to administer activities in their areas of responsibility in the best interests of the entire organization.

Required Courses

Students earning the B.S. in business administration must complete 120 credit hours. These courses must include the basic business curriculum listed earlier in this section and the courses listed below:

MG 231 Industrial Relations
MG 455 Managerial Effectiveness
MG 512 Contemporary Issues in Business & Society
MG 550 Business Policy
CO 100 Human Communication
EC 340 Microeconomic Analysis
EC 420 Applied Economic Analysis
FI 113 Finance
HS 105 & 106 Economic History of the Western World
IB 312 International Business

Business elective (3 credit hours).

B.S., Business Data Processing

Management use of quantitative methods has been increasingly reinforced by the application of high speed computer technology and techniques in organizations. The advances in simulation, mathematical programming, decision theory and computer control of systems have generated a need for personnel well trained in both the management sciences and the computer and information sciences.

Required Courses

Students earning the B.S. in business data processing must complete 120 credit hours. These courses must include the basic business curriculum listed earlier in this section and the courses listed below:

IE 102 FORTRAN
IE 224 Advanced FORTRAN
IE 225 Advanced COBOL
IE 325 APL/BASIC/RPG II
IE 332 PL/1
IE 334 Assembly Language
CO 100 Human Communication
EC 420 Applied Economic Analysis

HS 105 & 106 Economic History of the Western World
MG 200 Business Systems Analysis
MG 205 EDP Communication and Documentation
MG 350 Advanced Management
MG 400 Management Planning and Control Systems
MG 460 Information Systems for Operations & Management
MG 512 Contemporary Issues in Business and Society
MG 550 Business Policy
MG 560 Business Systems Simulation

B.S., Management Science

The purpose of this major is to make available to the student a program that combines classical education in organizational management with modern training in quantitative methods. The fundamental assumption on which the program is based is that it is desirable for a student to acquire a knowledge of the content of business and management with literacy and experience in the areas of quantitative techniques.

Advanced work in management consists of case analysis, small group discussions, seminars, simulation exercises ("management games"), and field studies in actual organizations.

Required Courses

Students earning the B.S. in management science must complete 120 credit hours. These courses must include the basic business curriculum listed earlier in this section and the courses listed below:

CO 100 Human Communication
EC 420 Applied Economic Analysis
FI 113 Business Finance
HS 105 & 106 Economic History of Western World
IB 312 International Business
MG 231 Industrial Relations
MG 324 Development of Management Thought
MG 350 Advanced Management
MG 455 Managerial Effectiveness
MG 512 Contemporary Issues in Business and Society
MG 515 Management Seminar
MG 550 Business Policy
MK 515 Marketing Management
QA 250 Quantitative Analysis

Business electives (9 credit hours).

Career Minor in Shipyard Management

The career minor in shipyard management is designed to give students majoring in management science specialized training in the managerial and planning skills needed in the shipbuilding industry today.

Required Courses

SM 410 World Shipbuilding
SM 412 Shipyard Management — Finance
SM 414 Shipyard Management — Planning and Control
SM 415 Shipyard Management — Marketing

B.S., Operations Management

The major in operations management develops the management skills required to analyze, design, implement and control operating systems in a variety of organizations, both profit and non-profit. The curriculum provides the student with a working knowledge of the nature and function ot operating systems and emphasizes the use of systems analysis techniques in their management.

Required Courses

Students earning the B.S. in operations management must complete 120 credit hours. These courses must include the basic business curriculum listed earlier in this section and the courses listed below:

CO 100 Human Communication
EC 420 Applied Economic Analysis
HS 105 & 106 Economic History of Western World
IE 233 Cost Control
IE 234 Production Control
IE 502 Operations Research
IE 508 Systems Analysis
MG 200 Business Systems Analysis
MG 231 Industrial Relations
MG 350 Advanced Management
MG 512 Contemporary Issues in Business and Society
MG 550 Business Policy
MG 556 Operations Management
QA 250 Quantitative Analysis
QA 333 Advanced Statistics

B.S., Personnel Management

The major responsibility of personnel management is to attract, develop and retain qualified personnel for the organization. The major applies the research of the behavioral and social sciences in manpower planning, personnel selection, compensation motivation, planning adjustment to change and the development of organizational performance. Industrial relations examines the organization of workers and union-management negotiations.

Majors in this field study established and developing systems for the resolution of conflict and the building of viable, accommodative relationships between employers and employees. Emphasis is placed upon the interaction of labor, management, and the government in establishing rates, hours and conditions of work. The approach is keyed to an institutional analysis of collective manpower problems and issues within an economic and organizational framework.

Required Courses

Students earning the B.S. in personnel management must complete 120 credit hours. These courses must include the basic business curriculum listed earlier in this section and the courses listed below:

CO 100 Human Communication
EC 340 Microeconomic Analysis
EC 350 Economics of Labor Relations
EC 420 Applied Economic Analysis
FI 113 Business Finance
FI 227 Risk and Insurance
HS 105 & 106 Economic History of Western World
IE 106 Safety Organization and Management
IE 223 Personnel Administration
IE 243 Work Analysis
MG 231 Industrial Relations
MG 455 Managerial Effectiveness
MG 512 Contemporary Issues in Business and Society
MG 550 Business Policy
P 111 Introduction to Psychology
P 212 Business and Industrial Psychology
SO 113 Sociology

A.S., Business Administration

To earn the A.S. in business administration, students must complete 60 credit hours including those courses listed below:

Required Courses

A 111 & 112 Introductory Accounting I & II
E 105 Composition

E 110 Composition and Literature
EC 133 & 134 Principles of Economics I & II
HS 105 & 106 Economic History of Western World
IE 105 Introduction to Data Processing
LA 101 Business Law
MG 125 Management and Organization
MK 105 Marketing
PE 111 & 112 Physical Education I & II
QA 118 Business Math
QA 128 Quantitative Techniques
QA 216 Statistics

Department of Marketing

Chairman: Assistant Professor Arvin Rodrigues, Ph.D., Columbia University

Professor: Satish Chandra, J.S.D., Yale University

Associate Professors: Robert P. Brody, D.B.A., Harvard University; John Kakalik, Ph.D., Michigan State University; Bernard Weiner, M.B.A., New York University

Assistant Professors: Robert Brooks, M.B.A., New York University; Richard J. Lucas, Ph.D., University of Massachusetts

The Co-op Program

The department participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

B.S., Marketing

Marketing focuses on a set of activities that are instrumental to the efficient flow of goods and services from producers to consumers. Marketing concepts are widely applied to governmental agencies, political campaigns, hospitals, and various other social organizations.

The study of marketing includes both managerial and societal perspectives. Managerial emphasis is placed heavily on the coordination of product, promotion, price and distribution policies optimally designed to relate the firm to its competitive environment. Societal dimensions include issues in consumer protection, legal and social responsibilities of the firm, and analyses of marketing's contribution to the total soceity.

Individual coursework is primarily designed to prepare majors for either a career in business or administration. Students may specialize in such areas as advertising, sales, logistics, marketing research, buyer behavior or marketing management.

Required Courses

Students earning a B.S. in marketing must complete 120 credit hours. These courses must include 30 credit hours of marketing, business and retailing courses, including those listed below:

MK 105 Principles of Marketing
MK 413 International Marketing Management
MK 442 Marketing Research and Information Systems
MK 515 Marketing Management
IB 312 International Business
RT 121 Introduction to Retailing

4 courses to be selected with an advisor.

B.S., International Business

International business is an interdisciplinary program which draws on areas of marketing, management, finance and economics in order to develop a multinational perspective on contemporary business opportunities throughout the world. It deals with the problems of developing and adapting business practices to operate within different economies, different political systems and different cultures.

A background in international business prepares the student for careers in both the private and public sectors, as well as in international nonprofit institutions.

Required Courses

Students earning a B.S. in international business must complete 120 credit hours. These courses must include 30 credit hours of marketing, business and retailing courses including those listed below:

MK 105 Principles of Marketing
MK 413 International Marketing Management
MK 442 Marketing Research and Information Systems
MK 515 Marketing Management
IB 312 International Business
RT 121 Introduction to Retailing

Other courses selected with an advisor.

B.S., Retailing

A major in retailing offers the student a professional degree which provides a variety of career options in retailing. The program combines a concentration in retail merchandising with a concentration in retail merchandising with a concentration in business core courses. The applied design studies and retailing courses furnish the student with a knowledge of products and the means of merchandising products, while the business core courses prepare the student to exercise the option of pursuing graduate studies in business or administration as well as progression into broader fields of management.

Retailing is a specialized area within the field of marketing which offers expanding opportunities to the college graduate, since the selling of goods and the distribution of those goods are key functions in our economy. The curriculum ot the retailing major emphasizes buyer behavior, product familiarity, promotion, merchandising management, and aspects of personal relationships important to an endeavor which demands continuous contact with the consumer and the satisfaction of their needs.

Required Courses

Students earning a B.S. in retailing must complete 120 credit hours. These courses must include 30 credit hours of marketing, business and retailing courses, including those listed below:

MK 105 Principles of Marketing
MK 413 International Marketing Management
MK 442 Marketing Research and Information Systems
MK 515 Marketing Management
IB 312 International Business
RT 121 Introduction to Retailing

Other courses selected with an advisor.

A.S., Retailing

An associate in science degree is available to students who successfully complete a two-year curriculum of courses included in the bachelor of science degree program. Students wishing to petition for the associate in science degree should contact their advisor.

Retailing Certificate

Coordinator: Arvin Rodrigues, Ph.D.

The marketing department offers a certificate in retailing to students who complete 15 credit hours of retailing courses. Students may choose

to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, if you are admitted, the credits earned may be applied toward the requirements for a degree program.

Designed for those presently employed in retailing, who wish to supplement their practical experience with the knowledge of product selection and merchandising techniques, as well as for those who wish to acquire the basic knowledge to enhance their career entry potential. All students are required to take 15 credit hours, including the courses listed below:

Required Courses

RT 212 Retailing of Textiles
RT 218 Retailing of Fashions
RT 309 Retail Advertising and Sales Promotion
RT 310 Retail Merchandise Management
RT 313 Retail Buying

Department of Public Administration

Chairman: Associate Professor Kenneth Fox, Ph.D., University of Pennsylvania

Professor: Robert Dworak, D.P.A., University of Southern California

Associate Professor: Jack Werblow, Ph.D., University of Cincinnati

Assistant Professors: Catherine Wiggins, Ph.D., New York University; Jessica Wolf, Ph.D., Yale University

The public administration program is designed to prepare students for public service responsibility as government program administrators, civic leaders and managers or private businesses deeply involved in governmental affairs. Stressed are the organization of government services, the behavior of public officials, the manner in which government raises revenue, the nature of public personnel systems, the role of collective bargaining in the public sector, the manner in which decisions on public expenditures are made and public administrative procedures.

An understanding of public administration is also essential for people preparing for careers in law, journalism and every aspect of business. Public administration training can be easily combined with specialized career programs at the University of New Haven.

Public administration students are strongly encouraged to systematically develop their public speaking, group discussion and writing skills through specialized instruction and as a part of their regular public administration course requirements.

The Co-op Program

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

B.S., Public Administration

All students earning the B.S. in public administration must take the basic courses listed below. The balance of the program is tailored to the student's particular interests such as urban planning and management, health administration and personnel management.

Students also are encouraged to pursue one of the concentrations listed later in this section.

Required Courses

PA 101 Introduction to Public Administration
PA 302 Public Administration Systems and Procedures
PA 404 Public Policy Analysis
PA 408 Collective Bargaining in the Public Sector
CO 100 Human Communication
E 105 Composition
E 110 Composition and Literature
EC 133 & 134 Principles of Economics I & II
EC 314 Public Finance
IE 105 Introduction to Data Processing
MG 125 Management and Organization
PE 111 & 112 Physical Education I & II
PS 121 American Government and Politics
PS 216 Urban Government and Politics

Choice of A 111 Introduction to Accounting I or QA 314 Research Techniques in Business and Government.

Health Administration Concentration

The concentration in health administration requires completion of the basic public administration courses listed earlier in this section, plus the courses listed below:

Required Courses

PA 305 Institutional Budgeting and Planning
PA 308 Health Care Delivery Systems
PA 490 Public Health Administration
PA 491 Public Health and Environmental Law

City Planning and Management Concentration

The concentration in city planning and management requires completion of the basic public administration courses listed earlier in this section, plus four of the courses listed below:

Required Courses

PA 307 Urban and Regional Management
PA 315 Metropolitan Planning
PA 320 Municipal Finance and Budgeting
PA 316 Urban Housing
PA 390 Administration Law

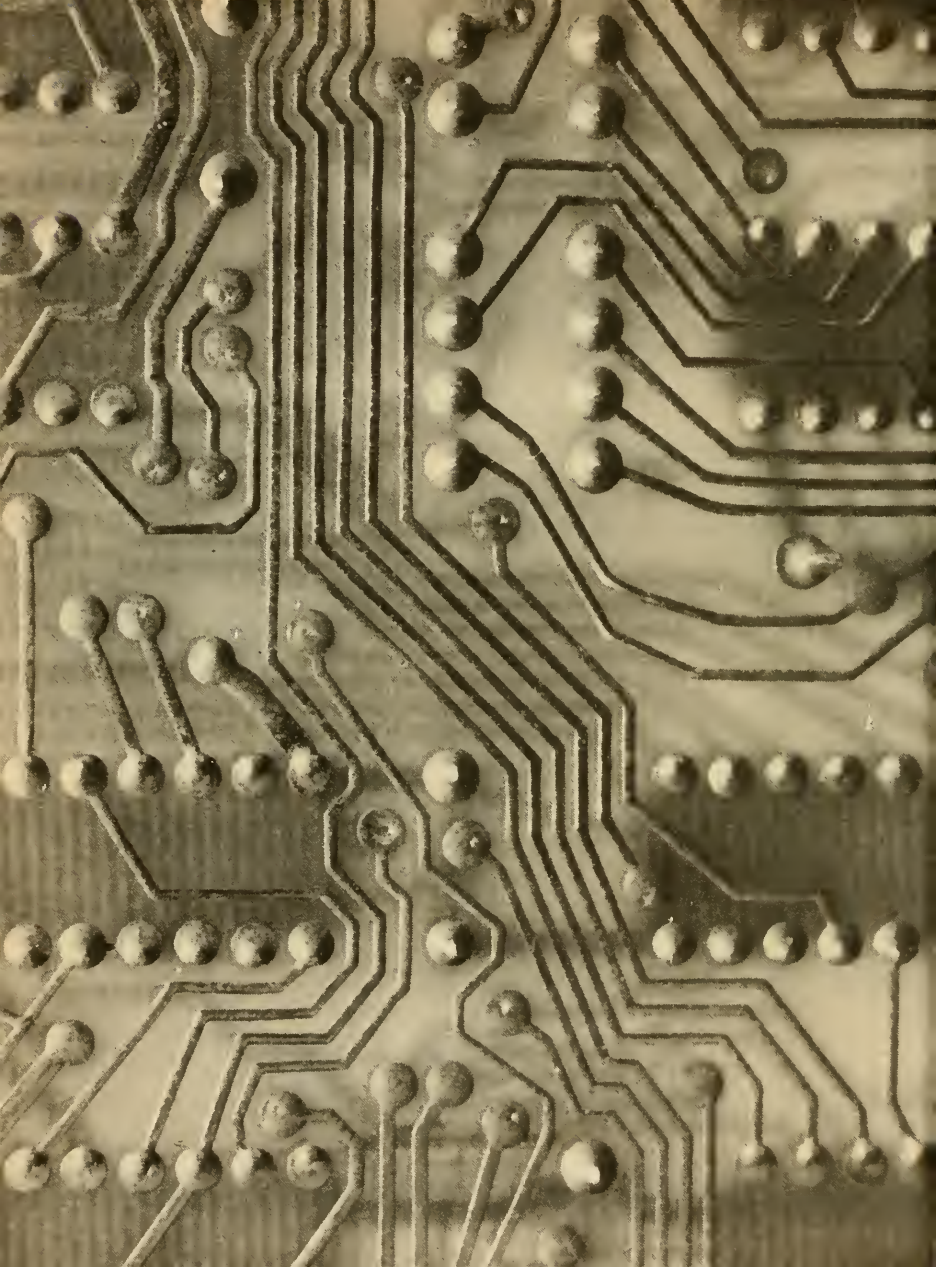
Minor in Public Administration

To obtain a minor in public administration, students must complete these courses:

Required Courses

PA 101 Public Administration
PA 302 Public Administration Systems and Procedures
PA 408 Collective Bargaining in the Public Sector

Two additional public administration courses.



SCHOOL OF ENGINEERING

Konstantine C. Lambrakis, Ph.D., dean

The continuously increasing complexity of technology and the need to match the earth's dwindling resources to the needs of a growing urban society demand an ever-increasing number of engineers and applied scientists. An engineer capable of meeting the challenges of the future may look forward to an exciting and rewarding career.

Because of its broad science and mathematical basis, the typical undergraduate engineering curriculum provides an excellent preparation not only for an engineering career but also for careers or advanced work in other fields such as law, business or medicine.

The School of Engineering at the University of New Haven offers both extensive facilities and well-trained faculty to meet the challenge of this rapidly changing field. Close ties with business and industry are maintained for the purpose of constantly assessing their needs and of providing the necessary feedback relative to current professional practices.

Although most of the courses in the curriculum are technological or scientific in nature, particular care is given to the cultural and literary education of the students. Among the required courses are courses in literature, composition, history and philosophy.

The School of Engineering offers programs leading to the associate in science degree and the bachelor of science degree. At the graduate level the School of Engineering offers programs leading to the master of science degree and the senior professional certificate. Detailed information on these graduate programs is in the Graduate School catalog.

Programs

Master of Science
Computer and Information Science
Electrical Engineering
Environmental Engineering
Industrial Engineering
Mechanical Engineering
Operations Research

Senior Professional Certificate
Computer Applications and Information Systems

Bachelor of Science
Chemistry
Computer Technology
Civil Engineering
Electrical Engineering
Industrial Engineering
Materials Engineering
Mechanical Engineering

Associate in Science
Chemistry
Engineering

Admission Criteria

An applicant for admission to the engineering programs should be a graduate of a secondary school of approved standing and should present 15 acceptable units of secondary school work. These should include four

units of English, two units of algebra, one of plane geometry, one half of trigonometry and one unit each of physics and a second science. Deficiencies in English, mathematics and science may be satisfied by summer school attendance, or by an extension of the stated curriculum for one or two semesters chosen to fit the student's need.

Satisfactory placement in the Scholastic Aptitude Test (S.A.T.) in mathematics and English as given by the College Entrance Examination Board, or satisfactory placement in the American College Testing (A.C.T.) program is required.

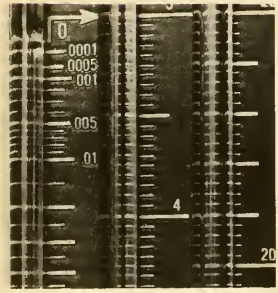
The Co-op Program

The School of Engineering will participate in the Cooperative Education Program, a five-year program that will enable the student to combine practical work experience with a college education. Students beginning their freshman year in the UNH School of Engineering in September 1982 or later may choose to participate in the program. For further details, please consult the engineering Co-op Education director.

Choosing a Major

Students in engineering are strongly advised to choose their major by the beginning of the sophomore year. Students who are accepted with academic deficiencies must satisfy those deficiencies before entering the sophomore year.

Those students who are unsure of their major in their sophomore year, or those students who desire to receive formal recognition of the completion of an associate's degree after two year's work, may enroll in the associate in science degree program in engineering.



General Policy of the School of Engineering

The following definitions apply to all degree programs within the School of Engineering.

Free electives

Any credit course offered by the university. No faculty approval required. *Note:* In most programs, School of Business courses are accepted *only* as free electives.

Humanities Electives

Courses from areas of humanities or social sciences to bring the engineering student to a better awareness of social responsibilities and related factors in decision making processes, and to broaden his cultural background. These courses are taken from the non-science departments of the School of Arts and Sciences.

Mathematics Electives

Courses from the mathematics department at a 200 or higher level, with the current exclusion of M 228 Elementary Statistics, which is offered to students in non-technical degree programs. Faculty advisers should be consulted for recommendations on the most relevant mathematics electives for a student's career objectives.

Technical Electives

Technical electives are upper level courses directly pertinent to a student's major field of study. These electives must be approved by the student's faculty advisor and may be chosen from engineering school courses and certain math and science courses. Faculty approval is particularly important to insure that students meet the math requirements of the Accreditation Board for Engineering and Technology.

Professional Accreditation

The curricula leading to the bachelor's degree in civil, electrical, industrial and mechanical engineering are accredited by the Accreditation Board for Engineering and Technology (A.B.E.T.), formerly called the Engineers' Council for Professional Development (E.C.P.D.).

Core Requirements Freshman Year

Bachelor degree programs for engineering majors contain a common core of requirements for the freshman year of study. The course requirements are listed below:

Core Requirements

CH 115 General Chemistry I
CH 117 General Chemistry Laboratory I
CH 116 General Chemistry II
CH 118 General Chemistry Laboratory II
E 105 Composition
E 110 Composition and Literature
ES 107 Introduction to Engineering
IE 102 Introduction to Computers: FORTRAN*
M 115 Pre-Calculus Mathematics
M 117 Calculus I
PE 111 & 112 Physical Education
PH 150 Mechanics, Heat and Waves with Laboratory

3 credit hours of humanities elective; industrial engineering students substitute HS 121 History of Science; civil engineering students substitute EC 133 Principles of Economics.

*Civil engineering students substitute ME 101.

A.S., Engineering

The associate degree provides students with formal recognition of having completed approximately half of the standard four-year engineering program. Students planning to acquire an associate degree must consult with the appropriate department chairman early in their studies to devise an acceptable sequence of courses leading to that degree.

Many students continue their studies to earn a bachelor's degree. To assure that credit earned in the associate degree program will be transferable to a bachelor's degree program, students are encouraged to select courses and electives in consultation with a faculty advisor.

To earn an A.S. in engineering, students must complete 64-67 credit hours including the core requirements for the A.S. degree listed below:

Required Courses

CH 115 & 116 General Chemistry I and II
CH 117 & 118 General Chemistry Laboratory I and II
E 105 English Composition
E 110 Composition and Literature
ES 107 Introduction to Engineering
IE 102 Introduction to Computers: FORTRAN
M 115 Pre-Calculus Mathematics
M 117 Calculus I
M 118 Calculus II
PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory

Chemistry and Engineering Chemistry Department

Chairman: Associate Professor George L. Wheeler, Ph.D., University of Maryland

Professor: Peter J. Desio, Ph.D., University of New Hampshire

Assistant Professor: Michael J. Saliby, Ph.D., State University of New York at Binghamton

B.S., Chemistry

Chemists are concerned with the structure of matter, the analysis of matter and the changes that matter undergoes. Today's chemists are solving chemical problems and developing new substances with the increasing use of laboratory instruments. Many of these instruments are interfaced with computers for rapid data analysis and display.

Jobs for chemists in today's market include the rapidly developing fields of instrumentation, computers, energy, environment, forensics, medicine, safety and health, pharmaceuticals, product and equipment development, chemical engineering, plastics and polymers, synthetic fibers, industrial chemistry, technical sales and services, and management.

The B.S. in chemistry program consists of all the courses recommended by the American Chemical Society and provides a rigorous background well-suited for those students who will pursue graduate studies in chemistry. The program is also highly recommended for pre-medical students. A formal B.S. program in chemical engineering is presently under development. Interested students should inquire.

The B.A. program in chemistry appears in this catalog under the School of Arts and Sciences.

Chemistry Club

The department has a chemistry club that is a student affiliate of the American Chemical Society. The club is open to all students, and all chemistry majors are encouraged to join. Club activities include projects, field trips, films, group discussions and social activities.

Required Courses

Students majoring in chemistry must complete from 121 to 125 credit hours, including the courses listed below:

Freshman

CH 115 & 116 General Chemistry I and II
CH 117 & 118 General Chemistry Laboratory I and II
E 105 Composition
E 110 Composition and Literature
M 117 & 118 Calculus I and II
PE 111 & 112 Physical Education I and II
PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory

Sophomore

CH 201 & 202 Organic Chemistry I and II
CH 203 & 204 Organic Chemistry I and II Laboratory
CH 211 Quantitative Analysis with Laboratory
CH 221 Instrumental Methods of Analysis with Laboratory
M 203 Calculus III

2 concentration electives.

ES 107 Introduction to Engineering may be substituted for one of the concentration electives.

3 credit hours of advanced mathematics elective.

Junior

CH 331 & 332 Physical Chemistry I and II with Laboratory
CH 351 Qualitative Organic Analysis with Laboratory
IE 102 Introduction to Computers: FORTRAN
IE 224 Advanced FORTRAN Programming

6 credit hours of humanities electives.
2 concentration electives.
3 credit hours of advanced chemistry elective.

Senior
CH 411 & 412 Seminar I and II
CH 451 Thesis I
CH 501 Advanced Organic Chemistry I
CH 521 Advanced Inorganic Chemistry I with Laboratory
CH 599 Independent Study

6 credit hours of social science electives.
4 concentration electives.

A.S., Chemistry

Students who wish to earn an associate degree in chemistry must take a total of 64-66 credit hours including the courses listed below:

Required Courses

Freshman
E 105 Composition
E 110 Composition and Literature
CH 115 & 116 General Chemistry I and II
CH 117 & 118 General Chemistry Laboratory I and II
ES 107 Introduction to Engineering
M 115 Pre-Calculus Mathematics
M 117 Calculus I
PE 111 & 112 Physical Education I and II
PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory

Sophomore
CH 201 & 202 Organic Chemistry I and II
CH 203 & 204 Organic Chemistry Laboratory I and II
CH 211 Quantitative Analysis with Laboratory
CH 221 Instrumental Methods of Analysis with Laboratory
IE 102 Introduction to Computers: FORTRAN
M 118 Calculus II

3 credit hours of humanities elective.
6-8 credit hours of restricted electives.

Minor in Chemistry

Students minoring in chemistry must complete 23-24 credit hours including the courses listed below:

Required Courses

CH 115 & 116 General Chemistry I and II
CH 117 & 118 General Chemistry Laboratory I and II
CH 201 & 202 Organic Chemistry I and II
CH 203 & 204 Organic Chemistry Laboratory I and II
CH 211 Quantitative Analysis with Laboratory
CH 221 Instrumental Methods of Analysis with Laboratory or elective*

*Elective should be chosen from CH 300 series or above.

Department of Civil and Environmental Engineering

Chairman: Associate Professor Ross M. Lanius, Jr., M.S.C.E., University of Connecticut; Professional Engineer, Connecticut, New Jersey

Professors: John C. Martin, M.E., Yale University, Professional Engineer, Connecticut, Colorado, New York, Massachusetts, Pennsylvania, Vermont

Associate Professors: M. Hamdy Bechir, Sc.D., Massachusetts Institute of Technology, Professional Engineer, Connecticut, Massachusetts, New Hamsphire, Vermont, Oklahoma; George R. Carson, M.S.C.E., Columbia University, Professional Engineer, Connecticut, Massachusetts, New York, New Jersey, Landscape Architect, Connecticut; Land Surveyor, Massachusetts, Connecticut; Professional Planner, New Jersey

The School of Engineering.

Civil engineering deals with planning, designing and constructing facilities serving mankind. These services are diversified and include the reduction of air and water pollution; transportation of man, materials and power; renewal of older sections of cities; development of new communities and development of water supply and power lines, railroads and tunnels; all with the least disturbance to the environment.

A civil engineer must have a solid background in mathematics, basic science, communication skills, engineering science, engineering design and humanities. The curriculum is designed to meet these basic criteria and is accredited by the Accreditation Board for Engineering and Technology (A.B.E.T.).

The first two years are essentially common to all engineering disciplines and include mathematics, basic sciences and communication skills. Students are expected to complete the core requirements for the freshman year listed earlier in this section.

The junior year is common to all civil engineering students and provides a basic background in engineering science. In the senior year, concentrated engineering design courses are available in the environmental, structural, surveying and transportation fields. Through the senior project and independent study, an in-depth study of a specialized field is available. Humanities courses are included at all levels.

Graduation Requirements

All candidates for the B.S. in civil engineering are expected to meet the university's requirements for graduation, listed in the opening section of the catalog. They are also expected to earn a cumulative quality point ratio of no less than 2.0 in all civil engineering courses and technical electives.

Student Chapter of the American Society of Civil Engineers

There is an active student chapter of the American Society of Civil Engineers at the university. The chapter sponsors technical lectures, field trips and social activities.

B.S., Civil Engineering

Students must complete a total of 131-135 credit hours for a degree in civil engineering including the core requirements for the freshman year listed earlier in this section. The required courses for the final three years of the program are listed below:

Required Courses

Sophomore

CE 201 Statics
CE 202 Strength of Materials
IE 102 Introduction to Computers: FORTRAN
IE 204 Engineering Economics
M 118 Calculus II
M 203 Calculus III
ME 204 Dynamics
PH 205 Electromagnetism and Optics with Laboratory

6 credit hours of humanities or social sciences elective.

Junior
CE 203 Elementary Surveying
CE 301 Transportation Engineering
CE 302 Building Construction
CE 304 Soil Mechanics
CE 306 Hydraulics
CE 312 Structural Analysis
CE 315 Environmental Engineering and Sanitation
CE 317 Structural Design Fundamentals
CE 323 Civil Engineering Laboratory I
CE 325 Construction Planning and Scheduling
M 204 Differential Equations
3 credit hours of technical electives.*

Senior
CE 324 Civil Engineering Laboratory II
CE 407 Contracts and Specifications
CE 501 Senior Project
EE 211 Principles of Electrical Engineering I
ME 301 Thermodynamics I

3 credit hours of technical electives.*
6 credit hours of humanities or social science electives.
9 credit hours of technical electives.*

*One technical elective must be an advanced mathematics course or IE 346 Statistical Analysis and two must be civil engineering design courses.

Minor in Civil Engineering

Students are required to complete 18 credit hours of civil engineering courses for the minor. With the approval of the chairman, engineering majors may substitute other civil engineering courses for a minor. Listed below are the required courses for the non-engineering major:

Required Courses
CE 203 Elementary Surveying
CE 301 Transportation Engineering
CE 302 Building Construction
CE 315 Environmental Engineering and Sanitation
CE 403 City Planning
CE 407 Contracts and Specifications

Department of Electrical and Computer Engineering

Chairman: Professor Gerald J. Kirwin, Ph.D., Syracuse University

Professors: Stephen Grodzinsky, Ph.D., University of Illinois; Kantilal K. Surti, Ph.D., University of Connecticut

Associate Professors: Darrell W. Horning, Ph.D., University of Illinois; Daniel C. O'Keefe, Ph.D., Worcester Polytechnic Institute

Assistant Professor: Tian-Pong Chang, Ph.D., Purdue University

Practitioner-in-Residence: Harish N. Mathur, M.S., University of Maryland

Electrical engineers are concerned with energy and signals. They apply fundamental principles to the design of systems and devices for the generation, transmission and control of energy. Their activities include the coding of information into electrical signals and the processing of these signals in various computer systems.

The domain of electrical engineering encompasses such familiar and practical devices as power systems, radio and television communications apparatus, computers and automatic control systems.

The techniques and design philosophies of electrical engineering have had extraordinary influence on the development and evolution of the digital computer. All electrical engineering students are required to enroll in several courses from the computer area and additional course work may be undertaken on an elective basis. The Department of Electrical Engineering expects to announce a new major program in computer engineering in the near future.

A graduate electrical engineer may serve in many professional capacities all of which require a thorough understanding of the scientific principles that govern electrical phenomena. As designers, electrical engineers use existing devices and techniques to meet the challenges of industry for more efficient, precise or reliable operations. These activities often lead to new concepts and techniques and sometimes to the discovery of new phenomena. The technical complexity of the services or products provided by many companies requires personnel with appropriate educational backgrounds. As a result, graduate electrical engineers also find employment opportunities in sales, customer service and maintenance.

An undergraduate program in electrical engineering must prepare the student for a career that may extend over 40 years. Consequently, in a field where new developments occur at a fast rate, it is imperative that the program of studies be heavily concentrated in the basic principles of the discipline.

At the University of New Haven, electrical engineering students divide their efforts between the tasks of learning engineering analysis methods and the techniques of electrical system design. Examples of modern applications associated with practical analysis and design problems are presented in lecture and laboratory courses. Because the origins of engineering methods are based in the sciences of chemistry, mathematics and physics, these subjects are an important part of the program of studies.

Electrical engineering students have direct access to the department laboratories, which include two Digital Equipment Corporation DEC PDP11 systems and various microcomputers.

Electrical engineering students should possess good analytical abilities including sound mathematical competence. They should also have a natural curiosity about the multitude of technical devices encountered in everyday life, a willingness to learn the principles that make these devices possible and a desire to create new devices and methods of solving problems.

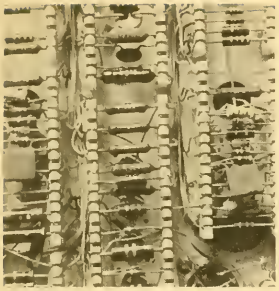
Student Chapter of Institute of Electrical and Electronics Engineers

The Department of Electrical Engineering has an active student section of the Institute of Electrical and Electronics Engineers (IEEE). This organization sponsors visiting lecturers and field trips to surrounding industrial sites. Eta Kappa Nu, the national honorary society for electrical engineers, has the Zeta Rho Chapter at the university to honor superior students and to encourage high scholastic achievements.

B.S., Electrical Engineering

Students must complete a total of 127-131 credit hours for a degree in electrical engineering including the core requirements for the freshman year listed earlier in this section. Humanities or social science electives must be selected from art, economics, English, history, philosophy, political science, psychology, sociology or world music. These electives may not include technical sources and must serve to broaden the student's cultural background.

Technical electives must be approved by the department chairman or the faculty advisor. At least three of these electives must be electrical engineering courses. The required courses for the final three years of the program are listed below:



Required courses

Sophomore

EE 201 & 202 Basic Circuits I and II
EE 253 Electrical Engineering Laboratory
EE 271 Computer Science
M 118 Calculus II
M 203 Calculus III
ME 204 Dynamics
ME 301 Thermodynamics I
PH 205 Electromagnetism and Optics with Laboratory

3 credit hours humanities elective.

Junior

EE 301 Network Analysis
EE 302 Systems Analysis
EE 347 Electronics I
EE 348 Electronics II
EE 349 Electrical Engineering Laboratory II
EE 355 Digital Systems I
EE 361 Electromagnetic Theory
EE 362 Electromagnetic Waves
M 204 Differential Equations

3 credit hours mathematics elective.
3 credit hours of technical elective.

Senior

EC 133 Principles of Economics I
EE 420 Random Signal Analysis
EE 453 Electrical Engineering Laboratory III
EE 465 Physical Electronics or EE 463 Electromechanical Energy Conversion, offered alternate years.
IE 204 Engineering Economics

9 credit hours of technical electives.*
6 credit hours of humanities electives.
3 credit hours of free electives.

*To insure that students meet the requirements of the Accreditation Board for Engineering and Technology, technical electives must be chosen in consultation with the student's advsior.

Department of Industrial Engineering and Computer Science

Chairman: Professor William S. Gere, Jr., Ph.D., Carnegie-Mellon University

Professors: Edward T. George, D.Eng., Yale University; Richard A. Mann, Ph.D., University of Wisconsin, Professional Engineer, Wisconsin; Alexis N. Sommers, Ph.D., Purdue University

Associate Professors: Joseph J. Arnold, M.S., Southern Connecticut State College; Francis J. Costello, M.S.M.E., Newark College of Engineering; Roger G. Frey, Ph.D., Yale University; Ira H. Kleinfeld, Eng.Sc.D., Columbia University

Assistant Professors: Ronald A. Haberman, M.S.O.R., Florida Institute of Technology; Richard A. Montague, M.S.I.E., Columbia University

Instructor: Priscilla H. Griscom, M.A., University of Rhode Island

The study of industrial engineering and computer technology prepares students for successful careers in manufacturing, research and service industries.

The industrial engineering program is concerned with designing systems that help manufacture and distribute products and services in the most effective way. Special emphasis is placed on the use of computers in modern industrial practice.

The computer technology program prepares students for a career in this growing field with a comprehensive curriculum that uses the latest in information systems equipment, the Data General Eclipse MV/8000.

The department is developing a new degree program, bachelor of science with a major in computer science. This degree program will include a number of the existing courses in computer technology together with new courses in such topics as data structures, data-base systems, and structure of programming languages.

Students in the industrial engineering major maintain a student chapter of the American Institute of Industrial Engineers. The student chapter operates under its own management but is affiliated with the local senior chapter. Students often attend the local meetings of the professional chapter, developing their sense of professional identity.

B.S., Industrial Engineering

The university's program in industrial engineering gives students a broad engineering background and, during the last two years, offers advanced courses that give students the perspective needed in modern industry.

Students may slant their course of study in one of three directions: industrial management, operations research or computer science.

Required Courses

Students earning the B.S. in industrial engineering must complete 130 to 133 credit hours. These courses must include the freshman core requirements listed earlier in this section, 33 credit hours in industrial engineering courses, and 12 credit hours of technical electives chosen in consultation with the student's advisor.

Technical electives must be selected in consultation with the student's advisor and the industrial engineering department chairman, in general, technical electives are junior- or senior-level courses in engineering, mathematics or physics.

Course requirements are listed below:

Sophomore

CE 201 Statics
CE 202 Strength of Materials
IE 204 Engineering Economics
M 118 & 203 Calculus II and III
ME 101 Engineering Graphics
ME 204 Dynamics
PH 205 Electromagnetism and Optics with Laboratory

1 English literature elective.
1 physics elective.

Junior

EC 133 Principles of Economics I
EC 350 Economics of Labor Relations
IE 214 Management Theory
IE 224 Advanced FORTRAN Programming
IE 234 Production Control
IE 243 Work Analysis
IE 346 Statistical Analysis
IE 502 Operations Research
M 204 Differential Equations or M 231 Linear Algebra

1 math elective.
1 technical elective.

Senior

EE 211 Principles of Electrical Engineering
IE 233 Cost Control
IE 443 Facilities Planning
IE 504 Senior Laboratory Project

1 additional electrical engineering course.
2 humanities or social science electives.
3 technical electives.

Minor in Industrial Engineering

Non-engineering students may minor in industrial engineering by completing 18 credit hours of industrial engineering courses. Engineering majors may substitute other industrial engineering courses for a minor. The required courses for the minor are listed below:

Required Courses

IE 102 Introduction to Computers: FORTRAN
IE 204 Engineering Economics
IE 233 Cost Control
IE 234 Production Control
IE 243 Work Analysis
IE 443 Facilities Planning

B.S., Computer Technology

The program in computer technology is designed to produce a graduate who has the ability to take control of a computer complex. Programming in several languages and the organization and association of computer machinery are treated in depth. A strong base in mathematics, physics and general business techniques and practices enables the graduate to work intelligently in either a business or engineering environment.

Required Courses

A total of 121 to 124 credit hours is required for the bachelor of science in computer technology. The freshman year curriculum in computer technology is not the same as most other engineering disciplines, and is included below.

Majors in computer technology are required to complete 39 credit hours of work in courses that are specifically related to computer technology. In addition to the above, the student is required to complete 18 semester hours in the industrial engineering discipline. Required courses are listed below.

Freshman

E 105 Composition
E 110 Composition and Literature
EC 133 Principles of Economics I
HS 108 History of Science
IE 102 Introduction to Computers: FORTRAN
M 115 Pre-Calculus Mathematics
M 117 Calculus I

ME 101 Engineering Graphics
PE 111 & 112 Physical Education I and II
PH 150 Mechanics, Heat and Waves with Laboratory

Sophomore
E 220 Writing for Business and Industry
IE 105 Introduction to Computers: COBOL
IE 204 Engineering Economics
IE 214 Management Theory
IE 225 Advanced COBOL Programming
IE 346 Statistical Analysis
M 118 Calculus II
P 111 Psychology
PH 205 Electromagnetism and Optics with Laboratory

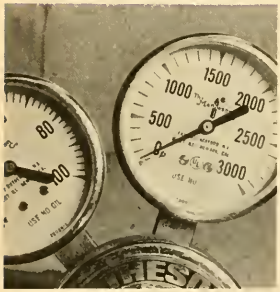
1 free elective.

Junior
EE 355 Digital Systems
IE 231 Interactive Programming in the BASIC Language
IE 233 Cost Control
IE 234 Production Control
IE 322 PL/1
IE 334 Assembler Language

Choice of EC 134 Principles of Economics II or EC 350 Economics of Labor Relations.
1 electrical engineering elective.
1 humanities or social science elective.
1 restricted elective selected with faculty advisor.

Senior
IE 320 Operating Systems
IE 335 Simulations and Applications
IE 502 Operations Research
IE 504 Senior Laboratory Project
IE 508 Systems Analysis

2 humanities or social science electives.
3 restricted electives selected with faculty advisor.



Department of Mechanical Engineering

Chairman: Professor Richard J. Greet, Ph.D., Harvard University

Professors: Konstantine C. Lambrakis, Ph.D., Rensselaer Polytechnic Institute; B. Badri Saleeby, Ph.D., Northwestern University; Thomas C. Warner, Jr., M.S., Massachusetts Institute of Technology, Professional Engineer, Connecticut

Associate Professors: Stephen M. Ross, Ph.D., The Johns Hopkins University; John Sarris, Ph.D., Tufts University; Richard M. Stanley, Ph.D., Yale University

The Department of Mechanical Engineering has a long history of success in producing outstanding graduates in the field of thermal sciences, fluids and design. To insure that graduates will continue to distinguish themselves in either graduate school or the practice of en-

gineering, the department places emphasis on the scientific foundation of the curriculum and on the breadth and scope of the professional courses. Implicit in this emphasis is a demand for a high level of maturity and flexibility on the part of the student.

B.S., Mechanical Engineering

The rapid advances in science and technology require that mechanical engineers, as generalists among engineers, not only have a thorough understanding of basic scientific principles, but also have an appreciation of human values and an awareness of the effects of their contribution to the social, professional, economic and ecological climate in which they work.

Several options for concentration at the senior year are available for a student to pursue. At that level, restricted elective courses may be selected, with the help of the student's faculty advisor, which offer the opportunity for further learning in areas such as fluids, energy, design, heat transfer, numerical analysis and computers, aerospace sciences and control systems.

Exceptional students having an overall average of 3.5 or better may joint the Delta Zeta Chapter of Pi Tau Sigma Honorary Fraternity which provides the opportunity for closer relations with the faculty and other prominent individuals in the field for the purpose of further professional development, involvement in faculty research and varied social and intellectual activities.

Membership in the American Society of Mechanical Engineers student section is open to all mechanical engineering students of good standing and provides the opportunity for field trips to local industrial establishments, social activities and reading of interesting professional literature.

Required Courses

Students earning the bachelor of science in mechanical engineering are required to complete 130 to 134 credit hours. Course requirements include the freshman year core listed earlier in this section and those courses listed below:

Sophomore

CE 201 Statics
CE 202 Strength of Materials I
M 118 & 203 Calculus II and III
ME 101 Engineering Graphics
ME 215 Instrumentation Laboratory
MT 200 Engineering Materials
PH 205 Electromagnetism and Optics with Laboratory

3 credit hours humanities elective.
3 credit hours science elective.

Junior

EE 201 & 202 Circuit Analysis I and II
M 204 Differential Equations
ME 301 & 302 Thermodynamics I and II
ME 307 Strength of Materials II
ME 311 Machine Elements
ME 312 Mechanical Design
ME 315 Mechanics Laboratory I
ME 344 Mechanics of Vibration

3 credit hours mathematics elective.

Senior

EC 133 Principles of Economics
IE 204 Engineering Economics
ME 321 Fluid Mechanics
ME 322 Gas Dynamics
ME 404 Heat and Mass Transfer
ME 415 Thermo/Fluids Laboratory

9 credit hours technical electives.*
6 credit hours humanities electives.

*To insure that students meet the math requirements of the Accreditation Board for Engineering and Technology, technical electives must be chosen in consultation with the student's advisor.

B.S., Materials Technology

The performance of virtually every electrical mechanical and structural device is limited ultimately by the materials from which it is made. The materials engineer is the expert on materials selection who must weigh the relative merits of metals against plastics, and specify materials for everything from ceramic magnets to aerospace composite fiber materials. The materials engineer is also the controller of materials processing during manufacture. This might include such diverse specialities as powder metallurgy, plastic extrusion, metal heat treatment and vapor deposition, to name but a few fabrication techniques.

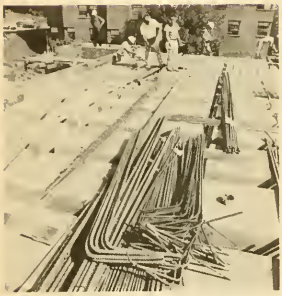
The bachelor of science degree program in materials technology provides a broad core curriculum to develop an understanding of the fundamental principles common to all materials. It also incorporates elective courses to enable the student to specialize in a particular materials engineering field.

Required Courses

Students earning the bachelor of science in materials technology are required to complete 120 to 124 credit hours, including those courses listed below:

CE 201 Statics
CE 202 Strength of Materials
CH 115 & 116 General Chemistry I and II
CH 117 & 118 General Chemistry Laboratory I and II
E 105 Composition
E 110 Composition and Literature
EC 133 Principles of Economics I
EE 201 Circuits I
ES 107 Introduction to Engineering
M 117 & 118 Calculus I and II
ME 204 Dynamics
ME 301 Thermodynamics
MT 219 Physical Metallurgy
MT 304 Mechanical Behavior of Materials
MT 310 Materials Laboratory
MT 342 Steels and Their Heat Treatment
MT 500 Research Project
PH 150 Mechanics, Heat and Waves with Laboratory
PH 205 Electromagnetism and Optics with Laboratory

Choice of IE 102 Introduction to Computers: FORTRAN or ME 101 Engineering Graphics.
6 credit hours of humanities electives.
12 credit hours of materials electives.
21 credit hours of technical electives.
12 credit hours of free electives.



SCHOOL OF PROFESSIONAL STUDIES AND CONTINUING EDUCATION

Richard C. Morrison, Ph.D., dean

The main objective of the School of Professional Studies and Continuing Education is to provide for the educational needs of the non-traditional student: the student who holds a full time job, the student interested in alternating periods of work with periods of full-time study, the student interested in one or more specialized courses rather than a full degree program, and the student in a non-traditional major are all served by this school. The school is divided into several distinct divisions to meet this variety of needs.

Division of Evening Studies

A wide variety of undergraduate courses are offered in evening sessions during the fall and spring semesters. All the offerings in this division are credit courses leading to bachelor's and associate degrees and certificate programs.

Summer Sessions

The university offers a comprehensive summer schedule for students who would like to continue their education year-round as well as for students returning home to New Haven from other colleges for the summer.

Winter Intersession

Each winter before the spring term begins, the university offers a two-week intersession. Classes meet every day, and students may only take one course during the intersession.

Certificate Programs

The university offers certificate programs in more than 20 fields. In general, these programs allow students to earn a certificate by taking from 18 to 30 credit hours in a given subject area. Later, the student may choose to apply these credits towards his or her undergraduate degree.

Module Program

The Module Program is an intensive program that permits students to obtain their associate dgree in business administration in 23 months. Students sign up for a series of nine-week modules—rather than attending classes on the traditional semester schedule.

Madison Program

To serve the community in the shoreline area, the university offers classes at the Mercy Center in Madison. Currently, the courses offered there are part of the associate degree in business administration program and the paralegal studies certificate program.

Cooperative Education Program

The Cooperative Education Program is a five-year program that enables the student to combine practical work experience with a college

education. While earning a bachelor's degree, the student works for a salary in a field related to his or her major.

UNH in Southeastern Connecticut

The university offers a wide range of degree programs to the Groton/New London area through its branch in that area, UNH in Southeastern Connecticut.

Special Studies and Professional Development

During both the fall and spring semesters, the university offers a number of special courses designed for the personal and professional growth of those attending. Courses generally meet once a week for 10 to 14 weeks. Continuing Education Units (CEUs) rather than credits are awarded for Special Studies courses.

Professional Development Seminars

The university offers a variety of workshops and seminars designed to build the professional skills and improve career opportunities for those attending. Continuing Education Units (CEUs) rather than credits are awarded for Professional Development Seminars.

Professional Studies

The School of Professional Studies and Continuing Education offers degree programs in these career areas: fire science, occupational safety and health, aeronautical technology, shipbuilding and marine technology.

Bachelor of Science

Arson Investigation
Fire Science Administration
Fire Science Technology
Occupational Safety and Health

Associate in Science

Aeronautical Technology
Fire and Occupational Safety
Occupational Safety and Health
Shipbuilding and Marine Technology

Certificate Programs

Aeronautical Technology
Arson Investigation
Fire Prevention
Occupational Safety and Health

Division of Evening Studies

Director: William A. Rowen, Ed.D., Indiana University

The University of New Haven recognizes that not every student can afford the time or expense of a full-time education. The Division of Evening Studies was established to serve those students seeking to widen their academic horizons while pursuing a career. The Division of Evening Studies is dedicated to guiding students into programs that best suit their strengths and career needs.

The university believes that work is a vital life experience, one which can be enhanced by academic study. To enrich this experience, a student's work should, if possible, be closely related to a chosen course of study.

Bachelor of arts degree programs are offered in art, biology, chemistry, communication, economics, English, history, mathematics, physics, political science, social welfare, and sociology.

Bachelor of science degree programs are offered in biology; business administration; business data processing; business economics; chemistry; civil engineering; communication; computer technology; criminal justice—administration; criminal justice—corrections; criminal justice—forensic science; electrical engineering; environmental studies; finance; financial accounting; fire science administration; fire science technology; hotel management, tourism and travel; industrial engineering; institutional food service administration; international business; management science; managerial accounting; marketing; material engineering; mechanical engineering; occupational safety and health; operations management; personnel management; physics; public administration; and retailing.

The Division of Evening Studies offers programs leading to associate in science degrees in aeronautical technology; business administration; communication; criminal justice—administration; criminal justice—corrections; engineering; fire and occupational safety; general studies; hotel management, tourism and travel; occupational safety and health; packaging and package handling; and retailing.

Most courses offered by the Division of Evening Studies, except laboratory and certain four-semester-hour courses, meet from 7 to 9:45, one evening a week. The university is open Monday through Saturday.

A student may carry as few as two semester hours or as many as eleven.

Admission Requirements

Generally, graduates of accredited secondary schools or persons who have a state high school equivalency diploma are eligible for admission.

Information regarding the examination for the state high school equivalency diploma may be obtained from the Director of Admissions or by writing to the Bureau of Youth Services, State Department of Education, State Office Building, Hartford, Connecticut 06103.

In some cases, a person who has completed at least two years of secondary school with a satisfactory record may be considered for admission, provided he or she performs exceptionally well on the required placement examinations. The university is interested in evidence of maturity, motivation and formal education as prerequisites for admission. Such an admission will be tentative for one year, during which the student must pass the examinations for the state high school equivalency diploma. A person who has not completed at least two years of secondary school will not be considered for admission.

With the exception of auditors, students taking any course, whether for a degree or not, must meet admission requirements.

Applicants are required to take admission tests, including scholastic aptitude, mechanics of English and reading comprehension. College Entrance Examination Board results, if satisfactory, are accepted in place of the University of New Haven admission tests. Applicants who have completed 30 or more credit hours of work with a C average or better at an approved college or university may be exempt from taking admission examinations.

Admission Procedure

Applicants who desire to seek admission should call or write the Division of Evening Studies to arrange for a personal interview. Interviews may be scheduled during or after office hours at the convenience of the applicant.

During the interview, the applicant will complete a personal data form, discuss and plan a program, and complete the necessary forms to request official copies of secondary school and college transcripts. The application fee is payable at that time.

Registration

All new students must register in person at the Office of Evening Studies. Currently enrolled students may register by mail prior to the announced deadline. Students who do not send their registration and required payments to the university on time must register in the Evening

Studies office prior to making any payments in the Bursar's Office. Current students who fail to complete this procedure will have an invalid registration and cannot be assured of a seat in a class. A separate registration is required for each semester and any summer or intersession students wish to attend.

Auditors follow the same procedure and pay the same tuition and fees as students enrolled in credit courses.

Payment of Tuition and Fees

The student completes the registration procedure by the payment of tuition and fees. There is a penalty fee for delaying either beyond the end of the registration period.

Students are urged to plan their programs carefully before completing registration forms to avoid the need for changes. Once the registration period has ended, the Change of Registration fee is charged for each change made. The fee is payable when the form requesting the change is submitted.

Summer Sessions

Day and evening undergraduate courses are offered during the summer in a series of sessions ranging from three to seven weeks in length. Classes begin shortly before or after graduation. Summer day courses are offered during all sessions and evening classes are held during four of the sessions.

The university welcomes visiting students from other colleges and universities who wish to transfer summer courses back to their institutions.

Credits earned at the University of New Haven are generally acceptable to other schools, but, for the protection of the student, a letter of authorization from the parent school is required before enrollment is permitted.

University of New Haven students can attend one or more of the UNH summer sessions to lighten their study load during the regular academic year, to reduce the time required for a degree, to prepare for other courses, to make up courses or to take additional work beyond that required for a degree and still complete a program on schedule.

A list of the courses offered during the summer is available from the Division of Evening Studies.

Winter Intersession

A number of undergraduate courses are offered during the period between regular sessions. These courses blend both tradition and innovative methods of instruction, including team teaching, field trips, lectures, laboratory work and research projects. A listing of courses offered during intersession will be available from the Division of Evening Studies before each session.

Certificate Programs

Students can take their first step towards an undergraduate degree by registering for one of 20 certificate programs at the University of New Haven.

Each certificate program is carefully designed as an introduction to a particular course of study. Later, students may choose to apply the credits they have earned towards their undergraduate degree.

Each program consists of a series of courses—or a total of 18 to 30 credit hours—in a specialized area. The university offers certificate programs in:

School of Arts and Sciences

Advertising Design
Fashion Design
Interior Design
Journalism
Paralegal Studies
Photography

School of Business
Dietetic Technician
Executive Housekeeping Administration
Hotel and Restaurant Management
Institutional Food Service Administration
Law Enforcement Science
Mass Communication
Security Management
Tourism and Travel

School of Professional Studies and Continuing Education
Arson Investigation
Fire Science
Occupational Safety and Health
Professional Pilot
Computer Applications for Supervisors
Computer Applications for Managers
Human Resources Management

Module Program

Students in this program attend classes two evenings per week for 23 months and receive an associate in science degree in business administration.

The program offered is the regular University of New Haven curriculum for the A.S. degree, only the calendar has been changed to fit the schedule of people with full-time jobs who cannot attend class at more traditional times.

Students who enter and complete two modules on the regular schedule may qualify for veteran's benefits on full-time status. Those who enroll may also qualify for other financial aid. New students may enter the program at the beginning of any module. New modules begin every 10 weeks.

Madison Program

The University of New Haven offers courses leading to an A.S. in business administration and a certificate in paralegal studies at the UNH center in Madison.

Classes are taught at the Mercy Conference Center, 167 Neck Road.

The Madison program runs on a trimester schedule, with new classes beginning each September, January and April. The schedule permits students to complete two courses in each of the three 13-week trimesters, thus completing six courses without summer sessions each year.

The associate's degree in business administration is composed of 20 three-credit courses and the certificate in paralegal studies is composed of six three-credit courses.

Division of Special Studies and Professional Development

Director: Muriel MacKay, B.S., University of New Haven

The Division of Special Studies and Professional Development offers a series of diversified certificate courses to meet the special educational needs of business, industry and professional people in Connecticut.

Special Studies

Special Studies courses, which run over a period of weeks, are developed in response to a specific need expressed to the division.

In past years, course offerings have ranged from specialized refresher courses for those planning to take either the land surveyor's examination or the professional engineering examination to courses designed to prepare students to meet the minimum requirements for real estate or insurance licensing. Courses have covered solar heating and cooling, speedreading, supervisory management, effective business writing and other topics.

Special Studies courses are offered on the main campus in West Haven and at off-campus locations. Several of the more popular courses have been offered in Groton, New London and other locations.

Professional Development Seminars

The division also offers a variety of professional development seminars, conferences and short-term institutes. All the courses are staffed by members of the faculty of the university or by persons recognized as experts in their fields of knowledge.

The seminars and conferences are structured to meet the specific needs of people interested in furthering their education in their careers. Since these offerings are not for credit, they are developed with a great deal of flexibility but always within the instructional excellence of the university.

These seminars are either intensive in nature, lasting from one to five days, or of very short duration—three or four hours daily for two or three weeks.

The division also holds on-site seminars and programs at companies and organizations around the state.

The university awards Continuing Education Units (CEUs) to individuals who complete any professional development seminar.

Cooperative Education Program

Director: Joseph J. Arnold, B.S., M.S., Southern Connecticut State College

Cooperative education, Co-op for short, is a unique program that enables a student to combine practical work experience with a college education. While enrolled in the Co-op program the student will earn a bachelor's degree along with a salary. And, because the student will work in a field related to his/her major, the career interest will be explored first-hand.

Co-op is a five-year program. The student attends classes full-time during the freshman year, and for the next four years alternates semesters of paid employment with course work at UNH.

UNH's Co-op program does more than help finance school expenses. The student gets out into the real world of his/her chosen career, meeting and getting to know people, gaining experience and insight—which adds up to a valuable head start in today's competitive job market.

For further details, students may consult the Co-op Education director or their faculty advisor.

Participating Programs

Students can major in a wide variety of programs at the University of New Haven and be a part of Co-op. Participating programs include:

School of Arts & Sciences

Applied Mathematics
Computer Science
Natural Science

Biological Illustration
Communication
English
Environmental Studies
Fashion Design
General Studies
Graphic and Advertising Design
Interior Design
Journalism
Paralegal Studies
Photography
Physics
Psychology
Social Welfare
Sociology

School of Business
Business Administration
Business Data Processing
Communication
Dietetic Technology
Finance
Hotel Management
Institutional Food Service Administration
Management Science
Marketing
Operations Management
Personnel Management
Public Administration
Retailing
Security Management
Tourism and Travel Administration

School of Engineering*
Civil Engineering
Computer Technology
Electrical Engineering
Industrial Engineering
Materials Technology
Mechanical Engineering

School of Professional Studies and Continuing Education
Arson Investigation
Fire & Occupational Safety
Fire Science Administration
Fire Science Technology
Occupational Safety & Health

*Beginning with the class entering September 1982.

UNH in Southeastern Connecticut

Director: Robert L. DeMichiell, Ph.D., University of Connecticut

The University of New Haven has sought to fill the educational needs of not only the New Haven area, but also of the southeastern Connecticut region through several undergraduate and graduate programs.

At the undergraduate level, there are credit and non-credit offerings in engineering, criminal justice, business administration, paralegal studies, computer science, aviation, and shipbuilding and marine technology.

Three certificate programs are available for individuals who are interested in a series of courses in one specialized area. Later, the individual may apply these credits toward his or her undergraduate degree.

In addition to classes open to the general public, UNH in Southeastern Connecticut offers several programs to the employees of local industries on the company premises. These programs include credit courses, certificate programs and executive seminars.

Admission and registration requirements for all UNH in Southeastern Connecticut programs are consistent with those for main campus students, but are handled at the local offices of UNH in Southeastern Connecticut.

Professional Studies

Aviation Programs

Director: Richard H. Strauss, M.P.A., University of New Haven

Coordinator: Steven M. Songer, B.S., U.S. Naval Academy

The aviation industry, both commercial and general, is a growing one. It employs 1.2 million people as flight and service personnel and in manufacturing. As the industry continues to expand there will be a need for additional personnel with technical skills.

The aeronautical technology program prepares students to meet the demands of the future and the career goals of the individual.

The associate in science degree in aeronautical technology provides the students with a two-year degree program which consists of the technical aviation background required for employment as a pilot. Additionally, a concentration of courses from the school of engineering, business administration, or arts and sciences is required. Following completion of the associate's degree, students may continue for a bachelor's degree in air transportation management or in a program designed to meet their individual career objectives.

The bachelor of science degree with a major in air transportation management is offered in the School of Business. Information on that program may be found under the Department of Management Science.

Students majoring in other programs at the university may select any of the aeronautical technology courses as electives.

The flight training portion of the aeronautical technology program includes private, commercial, instrument, instructor and multi-engine FAA certification, and may be completed at any of the university-approved regional flight schools: New Haven Airways (Tweed-New Haven Airport), Coastal Air Services (Groton-New London Airport), Cross-Country Aviation (Brainard Airport) and Danbury School of Aviation (Danbury Municipal Airport).

A.S., Aeronautical Technology

A total of 70 semester hours of credit is required for the associate in science degree in aeronautical technology. The program is designed to be completed in two years.

Required Courses

In addition to the aviation courses listed below, students should select an area of concentration of courses in consultation with the director of aviation programs, from a program within the Schools of Engineering, Business, or Arts and Sciences. This concentration will prepare students for the continuation of their education toward a bachelor's degree to meet their individual needs and career objectives.

AE 100 Aviation Science—Private
AE 105 Primary Flight—Solo*
AE 110 Aviation Meterology
AE 115 Private Pilot Flight*
AE 130 Aviation Science—Commercial
AE 135 Commercial Flight I*
AE 140 Concepts of Aerodynamics
AE 145 Commercial Flight II*
AE 200 Aviation Science—Instrument
AE 205 Commercial Flight III*
AE 210 Aircraft Powerplants, Systems and Components
AE 230 Flight Instructor Seminar
AE 235 Instructor Flight* or AE 245 Multi-Engine Rating*
E 105 English Composition
E 110 English Composition and Literature
EC 133 Principles of Economics
HS 102 Western Civilization II

Two math or science courses.

*Flight training courses.

Professional Pilot Certificate

Coordinator: Richard Strauss

The aeronautical technology department offers a professional pilot certificate. Students must complete between 28 and 31 credit hours to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, students who are admitted may apply the credits earned toward the requirements for a degree program.

Required Courses

All students are required to take a minimum of 29 credit hours (or 31 credit hours if AE 235 is taken). The courses are listed below:

AE 100 Aviation Science—Private
AE 105 Primary Flight—Solo*
AE 110 Aviation Meterology
AE 115 Private Pilot Flight*
AE 130 Aviation Science—Commercial
AE 135 Commercial Flight I*
AE 140 Concepts of Aerodynamics
AE 145 Commercial Flight II*
AE 200 Aviation Science—Instrument
AE 205 Commercial Flight III*
AE 210 Aircraft Powerplants and Systems
AE 230 Flight Instructor Seminar
AE 235 Instructor Flight* or AE 245 Multi-Engine Rating*

*Flight training courses.

Fire Science

Director: Frederick Mercilliott, M.P.A., D.A., Western Colorado University

In the last three years, the number of fires in this country increased more than 100 percent, while arson increased at an alarming rate of 300 percent.

This increase in the loss of life and property has triggered a rapidly growing need for trained professionals in the fire science field.

To meet this need, the University of New Haven offers four undergraduate degrees and two certificate programs that provide specialized training for fire professionals in mid-career as well as programs designed for those entering the field.

Students in the bachelor's degree programs must complete all the credits required for the associate in science with a major in fire and occupational safety, or their equivalent, earned at the University of New Haven or elsewhere. Equivalent work substitution is subject to evaluation by the director of fire science.

The student is advised to check with the director of fire science or the specific instructor for the proper background for the various fire science courses. It is recommended that the fire science courses be taken in the proper sequence along with the necessary electives.

B.S., Arson Investigation Minor in Criminal Justice

The bachelor of science program in arson investigation provides a much-needed program for the numerous firefighters, police officers and insurance people who must deal with arson—the fastest growing crime in the country.

By combining studies in arson investigation with a minor in criminal justice, students will become knowledgeable with the behavioral sciences, criminal justice and criminal law background needed by an arson investigator.

Required courses

Students earning the B.S. in arson investigation must complete 127 credit hours including those courses listed below:

FS 106 Fire Strategy and Tactics
FS 201 Essentials of Fire Chemistry with Laboratory
FS 202 Principles of Fire Science Technology
FS 207 Fundamentals of Fire Prevention
FS 301 Building Construction, Codes and Standards
FS 303 Fire Protection Fluids and Systems
FS 304 Fire Detection and Control
FS 306 Fire and Casualty Insurance
FS 402 & 406 Arson Investigation I & II
FS 404 Special Hazards Control
FS 405 Fireground Management
A 111 Introductory Accounting I
CH 115 & 117 General Chemistry with Laboratory I
CH 102 Criminal Law
CJ 201 Principles of Criminal Law
CJ 215 Introduction to Forensic Science
CJ 217 Criminal Procedure I
CJ 218 Criminal Procedure II and Evidence
CJ 221 Juvenile Delinquency
CJ 311 Criminology
E 105 Composition
E 110 Composition and Literature
EC 133 Principles of Economics I
IE 223 Personnel Administration
M 127 Finite Math
M 228 Elementary Statistics
P 111 Introduction to Psychology
P 336 Abnormal Psychology
PA 101 Introduction to Public Administration
PH 103 & 104 General Physics I & II
PH 105 & 106 General Physics with Laboratory I & II
SO 113 Sociology
SO 214 Deviance

B.S., Fire Science Administration

Students majoring in fire science administration learn how to bring contemporary business management techniques to the administration and development of a modern fire department.

Required Courses

Students earning the B.S. in fire science administration must complete 128 credit hours. These courses must include those required for the A.S. in fire and occupational safety, which are listed later in this section, plus the courses listed below:

FS 301 Building Construction, Codes and Standards
FS 303 Fire Protection Fluids and Systems
FS 306 Fire and Casualty Insurance
FS 402 & 406 Arson Investigation I & II
FS 403 Process and Transportation Hazards
FS 404 Special Hazards Control
FS 405 Fireground Management
FS 407 Arson Investigation II Laboratory
FS 498 & 499 Research Project
A 111 Introductory Accounting
CE 407 Contracts & Specifications
EC 133 Principles of Economics
IE 233 Cost Control
MG 231 Industrial Relations
PA 408 Collective Bargaining in the Public Sector
SO 113 Sociology

Recommended Courses

CJ 201 Principles of Criminal Investigation
CJ 215 Introduction to Forensic Science
FS 304 Special Hazards Control

B.S., Fire Science Technology

As its name implies, this program is more deeply concerned with the technological aspects of fire science. The stress is primarily on fire prevention. Many of the courses cover various engineering fields adapted to the problems that will confront the fire technologist. The essentials of fire chemistry; dynamics; statics; the way in which materials behave under various conditions of stress including heat, process and transportation; the design of industrial structures and conveyances for the maximum protection of the worker and the public are essential areas of study.

Courses in fire prevention play a role almost equal to that of fire prevention. These include an investigation of fire supression fluids and systems, hydraulics and thermodynamics. The student who completes this program is a planner, a designer of fire prevention systems, a judge of facilities and equipment.

Required Courses

Students majoring in fire science technology are required to complete 128 to 132 credit hours. In addition to completing the requirements for the A.S. degree in fire and occupational safety, students must complete the following courses:

FS 301 Building Construction, Codes and Standards
FS 303 Fire Protection Fluids and Systems
FS 304 Fire Detection and Control
FS 402 & 406 Arson Investigation I & II
FS 403 Process and Transportation Hazards
FS 404 Special Hazards Control
FS 405 Fireground Management
FS 498 & 499 Research Project
CE 201 Statics
CE 306 Hydraulics
CE 316 Code Administration
M 117 & 118 Calculus I & II

ME 204 Dynamics
ME 301 Thermodynamics I
MT 200 Engineering Materials
SO 113 Sociology

Recommended Courses

CJ 201 Principles of Criminal Investigation
CJ 215 Introduction to Forensic Science

A.S., Fire and Occupational Safety

The two-year associate in science degree offers students a well-rounded program in safety planning and techniques in both the fields of occupational safety and fire science.

Many students continue for their bachelor's degrees in the fire science field and/or become valuable members of municipal fire departments and safety investigation teams.

Required Courses

To complete the associate in science degree in fire and occupational safety, 67 credit hours are required including those courses listed below:

FS 105 Municipal Fire Administration
FS 106 Fire Strategy and Tactics
FS 201 Essentials of Fire Chemistry with Laboratory
FS 202 Principles of Fire Science Technology
SH 100 Safety Organization and Management
SH 200 Elements of Industrial Hygiene
SH 400 Occupational Safety and Health Legal Standards
BI 121 & 131 General and Human Biology I with Laboratory (or other biology elective)
CH 115 & 117 General Chemistry with Laboratory I
CH 107 & 108 Elementary Organic Chemistry with Laboratory I
E 105 Composition
E 110 Composition and Literature
IE 223 Personnel Administration
M 115 Pre-Calculus Mathematics
M 228 Elementary Statistics
MG 125 Management and Organization
P 111 Introduction to Psychology
PH 103 & 104 General Physics I & II
PH 105 & 106 General Physics with Laboratory I & II

Minor in Fire Science

Any students wishing to minor in fire science should contact the director of their program. A minimum of 18 credit hours is required for the major. The courses listed below are required unless a substitution is approved by the director of fire science.

Required Courses

FS 105 Municipal Fire Science Administration
FS 106 Fire Strategy and Tactics
FS 201 Essentials of Fire Chemistry with Laboratory
FS 202 Principles of Fire Science Technology
FS 303 Fire Protection Fluids and Systems
FS 304 Fire Detection and Control

Fire Science Certificate Programs

Coordinator: Fred Mercilliott, D.A.

The fire science department offers certificates in fire arson investigation and fire science. Students must complete between 21 and 30 credit hours depending on the program to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students

who take the non-credit option, it is not necessary to apply for admission to the university. However, students who are admitted may apply the credits earned toward the requirements for a bachelor's degree in fire science.

Arson Investigation Certificate

Designed to provide those in either the public or private sector with the scientific and legal knowledge needed to analyze situations for the possibility of arson. All students are required to take 30 credit hours, including the courses listed below:

Required Courses

CJ 102 Criminal Law
CJ 201 Criminal Investigation
CJ 215 Introduction to Forensic Science
FS 105 Municipal Fire Administration*
FS 201 Fire Science Chemistry
FS 207 Fire Prevention
FS 304 Fire Detection and Control
FS 402 Arson Investigation I
FS 406 Arson Investigation II
FS 599 Independent Study

*Criminal Justice majors may substitute PA 101 Introduction to Public Administration; transfer students may substitute police administration.

Fire Prevention Certificate

Designed to provide the essentials of fire science theory, fire detection and control techniques, and the administrative/legal aspects of fire protection. The program is applicable to the needs of both the private and public sectors of the fire protection profession. All students are required to take 21 credit hours, including the courses listed below:

Required Courses

FS 207 Fire Prevention
FS 301 Building Construction, Codes and Standards
FS 303 Fire Protection Fluids and Systems
FS 304 Fire Detection and Control
FS 402 Process and Transportation Hazards
FS 404 Special Hazards and Controls

A security course (CJ) or safety course (SH) may be substituted for FS 301, FS 304 or FS 403.

Occupational Safety and Health

Coordinator: Robert P. Barrows, C.S.P., C.P.P., B.S., M.B.A., University of Connecticut

Passage of the Occupational Safety and Health Act (OSHA) in 1970 has focused attention on health and safety issues from every factory and office in the nation right up to the office of the president of the United States and the Supreme Court.

This great interest in safety issues has generated a continually growing demand for professional practitioners in the field. Every employment field, industry, retailing, commerce, communications, construction, labor unions, as well as local state and federal government, has a need for competent safety specialists.

The demands placed upon the safety professional require a broad background in chemistry, physics, engineering, psychology and biology. The interdisciplinary program draws upon the resources of the Schools of Engineering, Arts and Sciences, and Business. In addition to required courses, students choose from among a diversified offering of

diversified offering of restricted electives and free electives with a balance of courses designed to meet the needs and interests of individual

In addition to the four-year bachelor of science program in occupational safety and health, the university also offers a two-year associate degree program in safety and an occupational safety and health certificate.

In developing course content, accreditation guidelines laid down by the American Society of Safety Engineers (ASSE), the Board of Certified Safety Professionals (BCSP), and the National Institute of Occupational Safety and Health (NIOSH) have been followed.

The Co-Op Program

The department also participates in the Cooperative Education Program, a five-year program that enables the student to combine practical work experience with a college education. For further details, students may consult the Co-op Education director or their faculty advisor.

B.S., Occupational Safety and Health

Candidates for the bachelor's degree in occupational safety and health are required to complete 129 semester hours. These courses must include those required for the associate degree, plus the courses listed below:

Required Courses

BI 510 Environmental Health
CH 110 Environmental Chemistry
E 220 Writing for Business and Industry
FS 304 Fire Detection and Control
IE 348 Manufacturing Processes
M 117 & 118 Calculus I & II
PH 130 Radiation Safety
SH 120 Sound-Hearing-Noise
SH 400 Occupational Safety and Health Legal Standards

15 hours restricted electives selected with advisor.

A.S., Occupational Safety and Health

Students earning the A.S. in occupational safety and health must complete 67 credit hours including those courses listed below:

Required Courses

A 111 Introductory Accounting I
BI 121 & 122 General and Human Biology I & II
BI 131 & 132 General and Human Biology Laboratory I & II
CH 115 & 116 General Chemistry I & II
CH 117 & 118 General Chemistry Laboratory I & II
E 105 Composition
E 110 Composition and Literature
FS 201 Essentials of Fire Chemistry with Laboratory
IE 223 Personnel Administration
M 115 Pre-Calculus Mathematics
M 228 Elementary Statistics
PE 111 & 112 Physical Education I & II
PH 103 & 104 General Physics I & II
PH 105 & 106 General Physics Laboratory I & II
SH 100 Safety Organization and Management
SH 110 Accident Conditions and Controls
SH 200 Elements of Industrial Hygiene

Occupational Safety and Health Certificate

Coordinator: Robert P. Barrows, M.B.A.

The occupational safety and health department offers an occupational safety and health certificate. Students must complete 18 credit hours to earn a certificate. Students may choose to take these courses for credit or non-credit. For those students who take the non-credit option, it is not necessary to apply for admission to the university. However, if you are admitted, the credits earned may be applied toward the requirements for a degree program.

This program of study covers the fundamentals of on-the-job safety and health as well as the requirements of the OSHA law. These courses provide an introduction to most situations that a new safety person would have to confront. Students must complete 18 credit hours, including the courses listed below:

Required Courses

FS 304 Fire Detection and Control
SH 100 Safety Organization and Management
SH 110 Accident Conditions and Controls
SH 200 Elements of Industrial Hygiene
SH 210 Sound-Hearing-Noise
SH 400 OSHA Legal Standards

Shipbuilding and Marine Technology

Director: B. Badri Saleeby, Ph.D., Northwestern University

The shipbuilding and marine technology program has been adapted from the university's traditional engineering program to meet the special needs and interests of employees of New England shipyards. The two-year associate in science degree is built on a heavy concentration of mathematics, science, general engineering and marine engineering.

Concentrations

Upon consulting with his/her advisor, the student chooses elective courses (12 credit hours) that satisfy a concentration requirement. The three available concentrations are: (a) engineering, (b) shipbuilding, and (c) management.

Transfer Credit

Under university regulations, students may receive transfer credit for up to 30 credit hours of appropriate and satisfactory course work completed at any accredited college or university. While no mechanism exists to award UNH credit for apprentice training, students may take crediting exams administered by UNH departments in any areas where they feel qualified. In order to qualify for the associate degree, 30 credit hours must be taken in residence.

A.S., Shipbuilding and Marine Technology

Students earning the associate in science degree in shipbuilding and marine technology must complete from 63 to 66 credit hours including those courses listed below:

Required Courses

SB 101 Introduction to Shipbuilding
SB 102 Ship Design
SB 201 Nuclear Ship Propulsion

One additional shipbuilding course.
12 credit hours general engineering courses.
12 credit hours in management or technical electives.
9-12 credit hours in science.
9 credit hours in mathematics.
9 credit hours in English or social sciences.
12 credit hours in management or technical electives.

COURSES

Accounting

A101 Introduction to Financial Accounting
Opened only to non-accounting majors. Deals primarily with reporting the financial results of operations and financial position to investors, managers, and other interested parties. Emphasizes the role of accounting information in decision making. 3 credit hours.

A 102 Introduction to Managerial Accounting
Prerequisite: A 101. This course is not open to non-accounting majors. The application of accounting in relation to current planning and control, evaluation of performances, special decisions, and long-range planning. Stress is on cost analysis. Additional topics include income tax planning, product costing and quantitative techniques. 3 credit hours.

A 111 Introductory Accounting I
Prerequisite to all other courses in accounting. A fundamental examination of the concepts, principles and procedures embodied in the financial accounting system. Emphasis will be placed upon the preparation of financial statements for service-rendering and merchandising business concerns through the application of financial accounting principles. 3 credit hours.

A 112 Introductory Accounting II
Prerequisite: A 111. An extension of the fundamental examination developed in A 111 to include the application of financial accounting principles to manufacturing business concerns. Additional emphasis will be placed upon an introduction to, and application of, managerial accounting principles for planning and controlling manufacturing operations. 3 credit hours.

A 221 Intermediate Financial Accounting I
Prerequisite: A 112. A rigorous examination of financial accounting theory and practice applicable to the corporate form of business organization. With an emphasis upon reporting corporate financial status and results of operations, the course will include: the principles governing, and the procedures implementing, accounting valuations for revenue, expense, gain, loss, current assets and deferred charges. Throughout, reference is made to the relevant publications of professional accounting societies and associations. 3 credit hours.

A 222 Intermediate Financial Accounting II
Prerequisite: A 221. Continuing the emphasis upon corporate financial reporting established in A 221. The principles and procedures applicable to accounting valuations for current liabilities, long-term liabilities, deferred credits and stockholders equity are examined. Special attention is directed to preparing the statement of changes in financial position. Additional topics include income tax allocation, pensions and leases, accounting changes, price level changes, installment sales and consignments. Throughout, reference is made to the relevant publications of professional accounting societies and associations. 3 credit hours.

A 223 Cost Accounting I
Prerequisite: A 112. An in-depth examination of the financial accounting principles and procedures underlying the determination and reporting of product costs for manufacturing concerns. Emphasis is placed upon the concepts and classifications of product costs (direct material, direct labor and manufacturing overhead), as well as the recording and accumulating of such costs within job order and process cost accounting systems. 3 credit hours.

A 224 Cost Accounting II
Prerequisite: A 223. A continuation of the emphasis on product-cost determination established in A 223, integrated with an examination of accounting systems for managerial planning and control. Topics include budgeting, standard costs, variance analysis, direct costing, cost-volume-profit analysis and joint and by-product costing. 3 credit hours.

A 225 Advanced Managerial Accounting
Prerequisite: A 224. A comprehensive analysis of the uses and behavioral implications of managerial accounting information. Emphasis will be placed upon the economic and motivational impact of internal accounting information for planning and controlling operations. Topics include budgets (capital and operating), performance reports, responsibility accounting (cost, profit and investment centers), transfer-pricing, performance measurement, contribution reporting, pricing methods and relevant costs of decision making. 3 credit hours.

A 331 Advanced Financial Accounting I
Prerequisite: A 222. A concentrated examination of financial accounting concepts and the principles and procedures applicable to partnership and consolidation accounting. Partnership topics include: formation and division of income, changes in ownership and liquidation. Consolidation topics include comprehensive coverage of the cost and equity methods, as well as other issues (purchase versus pooling of interests, entity theory, etc.) related to consolidation accounting. Other financial accounting topics of a specialized nature not previously covered may be included at the discretion of the instructor. 3 credit hours.

A 332 Advanced Financial Accounting II
Prerequisite: A 222. An examination and evaluation of the literature generated by authoritative financial accounting boards to determine its effect on the structure of financial accounting theory, its impact on financial accounting practice and its implications for the future role of the accountant. Extensive use is made of the publications of professional accounting societies and accounting associations. 3 credit hours.

A 333 Auditing and Reporting Principles
Prerequisite: A 222. A general examination of the role and function of the independent auditor in the performance of the attest function. Emphasis will be placed on current auditing pronouncements, the audit report, statistical sampling, evaluation of internal control and the determination of the scope of an audit. Rules and standards of compilation and review reports are presented. 3 credit hours.

A 334 Auditing Procedures
Prerequisite: A 333. An examination and evaluation of the detailed procedures associated with auditing accounts related to a firm's financial position, changes in financial position and operating results. An evaluation and documentation of internal control procedures will be an integral aspect of the evaluation of the fairness of accounting balances. A practical audit case will be used to develop an appreciation for the application of auditing techniques. 3 credit hours.

A 335 Federal Income Taxation I
Prerequisite: A 112. An introduction to the federal income tax law including history, economic and social aspects, sources of tax law and administration. Course coverage will be devoted primarily to individual taxation, including determination of gross income, deductions, exemptions, filing status and alternative methods of tax computation. 3 credit hours.

A 336 Federal Income Taxation II
Prerequisite: A 335. A continuation of A 335 including coverage of property transactions, capital gains and losses, non-taxable exchanges, tax accounting methods and elections, tax periods, tax credits, and introduction to taxation of corporations, subsidiary corporations and partnerships. 3 credit hours.

Aviation

Flight training costs are based on rates at university-approved flight training schools. This cost is not included in the university tuition charges and should be paid directly to the flight school.

An asterisk (*) indicates flight training courses which may be completed at any of the university-approved flight training schools in Connecticut. A student must register for these courses at the university in order to receive credit and be eligible for related aviation degree programs.

AE 100 Aviation Science—Private
Basic ground instruction in aircraft systems and controls. FAA regulations, air traffic control, communication, weight and balance, meterology, navigation, radio facilities and utilization, flight computer and aerodynamic theory. Successful completion of FAA Private Pilot airplane written examination is required. 3 credit hours.

***AE 105 Primary Flight—Solo**
Corequisite: AE 100. Introduction to flight. Concentration on the development of flying skills for solo flight. Course includes ground instruction required for each flight lesson. Minimum flight time requirements: dual instruction—10 hours; ground trainer—2 hours; solo—3 hours; discussion—4 hours. Laboratory Fee. 1 credit hour.

AE 110 Aviation Meteorology
Discussion and interpretation of atmospheric phenomena including an analysis of aviation forecasts and reports. 3 credit hours.

***AE 115 Private Pilot Flight**
Prerequisite: AE 105. Flight training in preparation for private pilot certification. This course includes solo practice of maneuvers to increase proficiency, cross country flying, and flight test preparation. Private pilot certification is required. Minimum flight time requirements: dual instruction—12 hours; solo—13 hours; discussion—8 hours. Laboratory Fee. 2 credit hours.

AE 130 Aviation Science—Commercial
Prerequisite: AE 100. Advanced ground instruction in navigation, flight computer, radio navigation, aircraft performance, engine operation, aviation physiology and FAA regulations including FAR Parts 135 and 121. Successful completion of FAA Commercial Pilot airplane written examination is required. 3 credit hours.

***AE 135 Commercial Flight I**
Prerequisite: AE 115. Continuation of flight instruction and practice for the purpose of developing a high degree of judgment and coordination through practice of advanced maneuvers and cross country flights. Minimum flight time requirements; dual instruction—23 hours; solo—40 hours; ground instruction—8 hours. Laboratory Fee. 2 credit hours.

AE 140 Concepts of Aerodynamics
The study of basic aerodynamics including theory of flight, analysis of the four forces, high lift devices, subsonic, transonic and supersonic flight. 3 credit hours.

***AE 145 Commercial Flight II**
Prerequisite: AE 135. Introduction to basic instrument flying and transition into high peformance complex single engine aircraft. Additional cross country and night flying practice. Minimum flight time requirements: dual instruction—22 hours; solo—16.2; ground trainer or aircraft (instrument)—7 hours; ground instruction—8 hours. Laboratory Fee. 2 credit hours.

COURSES

AE 200 Aviation Science—Instrument
Prerequisite: AE 130. Ground instruction in preparation for the FAA Instrument Rating. Study includes a discussion of pertinent regulations, IFR departure, enroute, and arrival procedures, flight planning, instrument approaches, air traffic control procedures and a review of meteorology. Successful completion of FAA Instrument-Airplane written examination is required. 3 credit hours.

***AE 205 Commercial Flight III**
Prerequisite: AE 145. Instrument instruction involving navigation, enroute, holding, and approach procedures. At the completion of this course the student will be qualified for commercial pilot certification as well as instrument pilot rating certification. Commercial and instrument pilot certification is required. Minimum flight time requirements: dual instruction—22 hours; solo—21 hours; ground trainer—3 hours; ground instruction—8 hours. Laboratory Fee. 2 credit hours.

AE 210 Aircraft Powerplants, Systems and Components
Prerequisite: AE 100. Discussion of the fundamentals of design and performance of aircraft engines including methods of construction, lubrication, carburation, engine operating procedures and control. In addition, the theory of operation and analysis of problems associated with aircraft components and systems, involving reciprocating and jet aircraft. 3 credit hours.

AE 230 Flight Instructor Seminar
Prerequisite: AE 200. Discussion of the fundamentals of instruction with specific emphasis on teaching as related to the flight instructor. Detailed study and analysis of maneuvers and topics required of the flight instructor. In addition, emphasis will be placed on practice teaching. Successful completion of FAA written examinations (Flight Instructor Airplane and Fundamentals of Instructing) is required. 3 credit hours.

***AE 235 Instructor Flight**
Prerequisite: AE 205. Flight instruction flight training in preparation for the FAA Practical Flight Test. Concentration on communication and analysis of maneuvers and procedures. Minimum flight time requirements: dual instruction—15 hours; solo—5 hours; ground instruction—5 hours. Laboratory Fee. 1 credit hour.

***AE 245 Multi-Engine Rating**
Prerequisite: AE 205. Prepares the commercial pilot for the FAA Multi-Engine Rating. Includes discussion of principles of multi-engine flight as well as flight training required for the rating. Multi-engine certification is required. Minimum flight time requirements: dual instruction—approximately 10 hours; ground instruction—approximately 10 hours. 1 credit hour.

AE 310 Air Transportation Management
Prerequisite: Senior standing or approval of academic advisor. Discussion of air commerce related to the transportation system. This course includes a study of commercial airlines and fixed-base operations. 3 credit hours.

AE 400 Airport Management
Prerequisite: Senior standing or approval of academic advisor. Discussion and study of operational functions of airports, general aviation operations, terminal building utilization, support facilities, public relations and airport financing as related to the airport manager. 3 credit hours.

AE 410 Corporate Aviation Management
Prerequisite: Senior standing or approval of academic advisor. Discussion and study of the importance of air transportation to the corporation; operational structure and concepts; cost analysis and budget techniques; aircraft analysis; personnel selection and management; aircraft maintenance; training; and scheduling. 3 credit hours.

AE 430 Aviation Safety Seminar
Prerequisite: Senior standing or approval of academic advisor. Critical analysis of aircraft accidents, accident prevention, development and evaluation of aviation safety programs. 3 credit hours.

Art

AT 101-102 Introduction to Studio Art
Foundation study in the visual arts designed to heighten the student's sensitivity and awareness. Problems in drawing, painting and design using a variety of materials. 3 credit hours.

AT 104 Weaving
Introduction to the basic techniques, including tapestry, using simple looms with study of various fibers. 3 credit hours.

AT 105 Basic Drawing I
A basic foundation course which includes a disciplined study in the fundamentals of drawing including studies from nature, study of perspective, exercises in coordination of hand and eye. 3 credit hours.

AT 106 Basic Drawing II
A continuation of AT 105 with emphasis on perspective and depiction of three-dimensional space and form by two-dimensional means. Study of architectural forms, natural objects and landscape. 3 credit hours.

AT 122 Layout and Printing Techniques
Prerequisites: AT 211 or AT 212; AT 312 or consent of the instructor. Techniques of layout, lettering and design in relation to printing methods. 3 credit hours.

AT 201 Painting I
Problems in pictorial composition involving manipulation of form and color. Various techniques of applying pigment will be explored as well as mixing pigments, stretching and priming canvases. 3 credit hours.

AT 202 Painting II
A continuation of AT 201 with further exploration of two-dimensional pictorial arrangements of form and color for greatest visual effectiveness. Students will be encouraged to develop their own personal idiom in the medium. 3 credit hours.

AT 203 Commercial Art I
Prerequisites: AT 122, AT 211 or AT 212; AT 312, or consent of the instructor. Exploration of the basic graphic design problems emphasizing typography and composition to develop the student's ability to communicate ideas and feelings effectively through visual means. 3 credit hours.

AT 204 Commercial Art II
Prerequisite: AT 203 or consent of the instructor. A continuation of AT 203 with emphasis on the application of design principles to actual job situations from the original concept to the mechanical. 3 credit hours.

AT 205 Ceramics I
Introduction to clay as an expressive medium. Hand-built and wheel-thrown methods with various glazing and decorative techniques. Stacking and firing kilns. An exploration of three-dimensional form. Good for engineers. Laboratory Fee. 3 credit hours.

AT 206 Ceramics II
Continuation of AT 205 with free exploration of novel and experimental approaches to the medium. Laboratory Fee. 3 credit hours.

AT 211 Basic Design I
A basic foundation course includes exploration of two-dimensional visual elements—line, color, light and dark, shape, size, placement, and figure-ground, and their effective use. A basic course for those wishing basic art understanding. 3 credit hours.

AT 212 Design II
A continuation of AT 211, Design I, with concentration on three-dimensional elements of design including positive and negative volumes, surfaces, structural systems, etc., employing a variety of materials. 3 credit hours.

AT 213 Color
An intensive exploration of color perception and interaction with manipulation of form and color for greatest effectiveness in pictorial compositions. 3 credit hours.

AT 216 Architectural Drawing
Prerequisite: AT 105 Basic Drawing I. Drawing as applied to architectural problems. Drafting, drawing conventions, presentations, graphic symbols, line quality and context, and free hand drawing. 3 credit hours.

AT 231 History of Art I
Western Art from the cave through the Middle Ages to Gothic. This course seeks to understand expressive, social, cultural, political and economic aspects of the cultures in which specific art styles and visual developments emerged. This course forms the basic vocabulary for History of Art II. Includes economic and technological changes in the societies and their reflections in art. Appropriate for business and engineering students. 3 credit hours.

AT 232 History of Art II
Western Art from the Renaissance to the twentieth century in Europe and America; a continuation of AT 231. 3 credit hours.

AT 233 History of Interior Design
A survey of developments in the decorative arts from antiquity to the present day. Special consideration of the esthetic and practical relationships of architectural space to interior decor. For the major and those interested in home decoration. 3 credit hours.

AT 302 Figure Drawing
Prerequisites: AT 105, AT 106, AT 107. A more advanced study of drawing which concentrates on the human figure. 3 credit hours.

AT 304 Sculpture I
The exploration of three-dimensional materials for maximum effectiveness in expressive design. Experimentation with clay, plaster, wood, stone, canvas, wire screening, metal, found objects. A basic understanding of major, fundamental methods: casting and carving. Laboratory Fee. 3 credit hours.

AT 305 Sculpture II
A continuation of AT 304 with further exploration of three-dimensional materials and the possibilities they present for creative visual statements. Laboratory Fee. 3 credit hours.

AT 309 Photographic Design
Prerequisite: AT 313 or AT 314. Introduction to basic materials and techniques of black and white photography used in graphic (advertising) design. The image as it relates to type and other art work, including posters, advertisements, manuals, etc. Laboratory Fee. 3 credit hours.

AT 312 Lettering
Prerequisite: AT 211 or permission of the instructor. Design and execution of basic hand lettering with pen and brush; utilization of hand lettering and type in the design of printed matter; use of letter forms as an element of visual design.

AT 313-314 Photography I and II
Introduction to basic techniques, materials and esthetic aspects of black and white photography. Laboratory course with emphasis on the individual student's image making. Photography II gives special attention to problems dealing with images in groups, series and sequences. New techniques and technical demonstrations. Laboratory Fee. 3 credit hours each.

COURSES

AT 315 Printmaking
The expressive potential of the graphic image through the techniques of silkscreen, wood cut, wood engraving, linoleum blockprint, collotype, monotype and photo-silkscreening. Problems in black-and-white and color. Laboratory Fee. 3 credit hours.

AT 317 Interior Design
Prerequisites: AT 211 or AT 212; AT 233 or consent of the instructor. A basic studio course with exploration of interior design problems and their relationship to architecture. Special emphasis on exploitation of space, form, color and textures for greatest effectiveness. 3 credit hours.

AT 319 Textile Design
Prerequisites: AT 104; AT 211 or AT 212 or consent of the instructor. Studio course in design of fabrics. Study of various fibers and their characterics for practical application in fashion and interior design. Laboratory Fee. 3 credit hours.

AT 320-321 Fashion Design I-II
Prerequisites: AT 211, AT 212 or consent of the instructor. Studies in fashion design with particular attention to the characteristics of various fabrics; color, texture, pattern and draping qualities as used in fashion applications. Fashion show co-ordination, accessories and makeup. 3 credit hours each.

AT 322 Illustration
A solid foundation in the techniques of creative illustration. Various media and their expressive possibilities will be studied; charcoal, pencil, pen and ink, wash, colored pencils, acrylic. Focuses on application of these techniques. 3 credit hours.

AT 330 Film Animation
The basic techniques and concepts of film animation as used in cartooning, titling, advertising and fine art. Students will work individually or in groups on their own animation projects. 3 credit hours.

AT 331 Contemporary Art
Focusing on art since 1945. The development of the present stems from ideas emanating from the 1870's—especially Impressionism—this course seeks to understand these connections. Emphasizes economic historical and technological developments and is appropriate for business, communication, history and engineering students. 3 credit hours.

AT 333 Survey of Afro-American Art
Black art in the United States from the Colonial period to the present. Consideration of African cultural influences. Analysis of modern trends in Black Art. 3 credit hours.

AT 401 Studio Seminar I
Prerequisites: AT 101-102, AT 201, AT 302 or AT 313, and art electives. Drawing on developments through their previous study, students will concentrate on major projects in the areas of their choice. 1-4 credit hours.

AT 402 Studio Seminar II
Prerequisite: AT 401. Continuation of Studio Seminar I. 1-4 credit hours.

AT 403-412 Topics in the Visual Arts
Variable credit.

AT 599 Independent Study
Prerequisites: consent of the instructor and chairman of department. Opportunity for the student under the direction of a faculty member to explore an area of interest. This course must be initiated by the student. 1-3 credit hours.

Biology and Environmental Studies

Courses that are marked with an asterisk (*) are usually scheduled every other academic year. Courses marked with a dagger (†) may be offered at the discretion of the department.

BI 115 Nutrition and Dietetics
Types of foods, vitamins, minerals, enzymes, hormones and the processes and products of digestion. Factors and effects of malnutrition and food additives. Concepts and composition of balanced and special diets. 3 credit hours.

BI 116 Fundamentals of Food Science
Types of nutrients in foods; the action of the body on these, and the action of nutrients on the body. Also discussed are methods of preservation, storage, spoilage, sanitation, food contaminants and food as a waste product are discussed at an elementary level. One hour of class time per week will be devoted to field work or demonstration. Does not constitute laboratory credit. Laboratory Fee. 3 credit hours.

BI 121-122 General and Human Biology I and II
An introduction to the study of biology which integrates biological principles and human biology. Major topics covered are biochemistry, cell and molecular biology, genetics, anatomy and physiology, behavior, ecology and evolution. BI 121 is a prerequisite for BI 122. Must be taken concurrently with laboratory (BI 131-132). 6 credit hours.

BI 131-132 General and Human Biology Laboratory I and II
A laboratory course involving experimentation and the demonstration of principles presented in BI 121-122. Must be taken concurrently with BI 121-122. Laboratory Fee. 2 credit hours.

BI 152 Horticulture
Introduction to cultivated plants. Special attention will be paid to the evolution and selection of interesting species. Propagation, identification and classification will be studied. Inter-relationships with plants and animals will be discussed. Economic importances will be covered. Lectures, labs, greenhouse work and field trips are scheduled in this course. This course may not be used by students to satisfy a science requirement, nor may it be used as a biology or science elective in any program in the departments of general science, biology and environmental studies. 3 credit hours.

BI 201 Genetics
Prerequisites: BI 122, BI 251 or BI 252. Mendelian genetics and developments that have produced the modern concept of inheritance; the role of DNA and theories of the chemical basis of heredity. Various aspects of human, medical and population genetics and the role of these in evolutionary processes. 3 credit hours.

†BI 202 Genetics Laboratory
Prerequisite: BI 201. Theory and techniques using flies, yeasts, bacteria and viruses to illustrate the classical genetic theories. An introduction to biometrics. One assigned lecture-laboratory session and one laboratory period unassigned. Laboratory fee. 2 credit hours.

***BI 210 Human Anatomy and Physiology with Laboratory**
Prerequisites: BI 121, BI 131. Structure and function of the human body in health and disease. A study of the essential characteristics of all the organ systems and the way they contribute to the functions of the body as a whole. May be taken in place of BI 122, General Biology II. Course includes 3 class hours and one 3-hour laboratory per week. Laboratory fee. 4 credit hours.

BI 220 General Ecology with Laboratory
Prerequisite: one course in the biological sciences. The interactions of living organisms, including man, with each other and with their environment. Discussion of population regulation, community structure, geochemistry and energetics. Laboratory Fee. 4 credit hours.

BI 221 Human Ecology
Understanding human involvement in and alteration of ecosystems through overpopulation, use of resources and pollution. Consideration of economic, cultural and behavioral factors. 3 credit hours.

†BI 223 Human Ecology Laboratory
Prerequisite: BI 220 or BI 221. Laboratory or field work devoted to current environmental problems, such as population trends, land use, resources, pollution, waste disposal and transportation. The course includes two lectures and one laboratory per week. Laboratory fee. 3 credit hours.

BI 225 Evolution
Discussion of the processes responsible for the origin and evolution of life on earth. Special attention is given to the evolution of human beings. 3 credit hours.

†BI 227 Entomology with Laboratory
Prerequisites: BI 122 and BI 132, or BI 251. Study of classification, evolution, anatomy, development, ecology, and natural history of insects, arachnoids and other terrestrial arthropods. Medical and economic aspects will also be stressed. Laboratory Fee. 4 credit hours.

BI 251 Zoology with Laboratory
Prerequisites: BI 121 and BI 131, or biology major. The general morphology and physiology of animals from the amoeba to human beings, taken phylum by phylum. Dissection of representative animals from the major phyla. Laboratory fee. 4 credit hours.

BI 252 Botany with Laboratory
Prerequisites: BI 121, BI 131, or biology major. The comparative structure, function, habitat and evolutionary relationships of plants; techniques of plant identification and classification. Field trips conducted when possible. Laboratory Fee. 4 credit hours.

†BI 291-292 Biology Teaching Laboratory
Prerequisites: BI 122, BI 132, consent of the instructor. Designed for prospective teachers, department majors and laboratory assistants. Students supervised by an instructor in techniques concerning laboratory instruction, testing, grading, purchase and inventory of supplies and equipment. 2 credit hours.

BI 301 Microbiology with Laboratory
Prerequisites: BI 121, BI 131, CH 103. A history of microbiology and a survey of microbial life. Includes viruses, rickettsia, bacteria, blue-green algae and fungi; their environment, growth, reproduction, metabolism and relationship to man. Laboratory Fee. 4 credit hours.

***BI 302 Bacteriology with Laboratory**
Prerequisites: BI 121, BI 131, CH 103. Theoretical and laboratory study of the morphology, physiology and classification of bacteria. The application of these facts to agriculture, industry, sanitation, public health and disease. Laboratory fee. 4 credit hours.

BI 303 Histology with Laboratory
Prerequisites: BI 121, BI 131 or BI 251. Microscopic and chemical structure of normal organs and tissues and their cell constitutents as related to function. Microscopic observations, tissue staining and slide preparation. Laboratory fee. 4 credit hours.

COURSES

***BI 304 Immunology with Laboratory**
Prerequisites: BI 121, BI 131, CH 103 or CH 115. The nature of antigens and antibodies, formation and action of the latter, other immunologically active components of blood and tissues and various immune reactions. Laboratory fee. 4 credit hours.

***BI 307 Comparative Vertebrate Anatomy with Laboratory**
Prerequisite: BI 251. The structure, origin and evolutionary history of the vertebrate organ systems. In the laboratory, representative species of each vertebrate class are dissected with attention given to the individual organ systems. Laboratory fee. 4 credit hours.

***BI 308 General Physiology with Laboratory**
Prerequisites: BI 251, CH 116, PH 104, PH 106. Basic theories of physiology as applied to plants and animals. Practical aspects and experimental techniques studied in the laboratory. Laboratory fee. 4 credit hours.

†BI 309 Plant Morphology and Taxonomy with Laboratory
Prerequisite: BI 252. Comparative plant structure and reproduction, particularly as related to the classification of plants. Laboratory involves examination of microscopic slides, models, preserved specimens and dissected materials. Laboratory fee. 4 credit hours.

†BI 315 Nutrition and Disease
Prerequisites: BI 115, BI 121-122. Aspects of diet in treating and preventing various symptoms and syndromes, diseases, inherited errors of metabolism and physiological stress conditions. 3 credit hours.

BI 320 Forensic Medicine
Prerequisites: BI 122, BI 132, CH 116, CJ 215. Introduction to the medico-legal aspects of medicine emphasizing the relationship of the natural sciences. Injuries from various causes, effects of poisons, sex-offenses, autopsies and estimation of time of death will be covered. History of forensic medicine, its limitations and progress, odontology, malpractice and organ transplants will be discussed. 3 credit hours.

***BI 325 Industrial Microbiology with Laboratory**
Prerequisites: BI 301 or BI 302, CH 115. Examination of the productive utilization of microorganisms in the areas of fermentation, antibiotics, single cell protein, biodeterioration, vitamins, bioassay, and others. Lesser emphasis on areas where microbes constitute a nuisance to industrial processes. Laboratory fee. 4 credit hours.

BI 331 Animal Behavior
Prerequisites: BI 121 or BI 251, P 111. Behavioral patterns of animals studied on a comparative basis. Principles of ethology are discussed and related to genetics, psychology, ecology, evolution, physiology and social structure. 3 credit hours.

***BI 333 Medical Microbiology with Laboratory**
Prerequisites: BI 301 or BI 302, CH 115. A study of the more common diseases caused by bacteria, fungi and viruses, including their etiology, transmission, laboratory diagnosis and control. Laboratory Fee. 4 credit hours.

***BI 335 Food Microbiology with Laboratory**
Prerequisites: BI 301 or BI 302, CH 115. Microorganisms involved with the production of food products such as bread, cheeses, malt beverages, wine, sauerkraut. Food contamination and spoilage caused by microorganisms and methods of food preservation. Laboratory Fee. 4 credit hours.

BI 361-362 Biochemistry I and II with Laboratory
Prerequisites: CH 201, CH 202, CH 203 and CH 204. A survey of biochemistry including a discussion of pH, buffers, water, bioenergetics, oxidative phosphorylation, enzymology, metabolic regulation, and the structure, function and metabolism of carbohydrates, proteins, lipids, nucleic acids, vitamins and cofactors. Laboratory exercises are primarily designed to concentrate on various experimental techniques including electrophoresis, chromatography, spectrophotometry, centrifugation and enzymology. Laboratory Fee. 8 credit hours.

***BI 401 Embryology with Laboratory**
Prerequisite: BI 251. Origin and development of tissues, organs and organ systems during the embryonic and post embryonic stages. In the laboratory, the chick is grown and studied at various stages. Laboratory fee. 4 credit hours.

†BI 402 Cytology with Laboratory
Prerequisite: BI 362. Structure and basic concepts of cellular and tissue function on the molecular, subcellular and cellular level, problems and techniques of cellular biology. Tissue cultures techniques in laboratory. The microscope and audiovisual equipment are also employed. Laboratory fee. 4 credit hours.

†BI 501 Parasitology with Laboratory
Prerequisite: BI 251. Life history, physiology, morphology, reproductive cycle and economic importance of most common parasites of plants and animals. Spread and control of communicable and organic diseases. Laboratory fee. 4 credit hours.

***BI 502 Fresh Water and Marine Ecology**
Prerequisites: BI 251, BI 252, BI 220. The ecology of lakes, rivers, estuaries and the oceans. Laboratory involves extensive field work. Laboratory fee. 4 credit hours.

***BI 503 Pathology with Laboratory**
Prerequisite: BI 303. Causes, symptoms, progress, effect and control of diseases of animals, primarily man. Laboratory observation of diseased cells, tissues and organs will be conducted partly at the University of New Haven and partly at St. Raphael's Hospital. Laboratory fee. 4 credit hours.

†BI 504 Phycology and Mycology with Laboratory
Prerequisites: BI 251, BI 252, BI 301. Freshwater, marine algae and the various types of fungi. Structure, physiology, life cycles, reproduction, nutrition, ecology and their function as disease producers. Laboratory fee. 4 credit hours.

†BI 505 Neuroendocrine Physiology
Prerequisites: P 111 or BI 212. Morphology and physiology of the neurological and endocrine systems as related to the control of body functions. Relationship to behavior with examples from psychobiology and ethology. 3 credit hours.

***BI 506 Sanitation and Food Science**
Prerequisites: BI 301 or BI 302. Aspects of various types of sanitation are covered, especially as related to food use, processing and preservation. 3 credit hours.

***BI 510 Environmental Health**
Prerequisites BI 122 or BI 251; CH 103 or CH 115. The emphasis is on the health effects of environmental and occupational pollutants and on the spread and control of communicable diseases. Toxicological and epidemiological techniques are discussed. 3 credit hours.

†BI 515 Biophysics I with Laboratory
Prerequisites: CH 116, BI 362, PH 104, PH 106, M 116. Principles and properties of large and small molecules in solutions, particularly in body fluids. Physical laws and theories of gases, liquids and solutions. Thermal chemistry and reaction rates as related to biological systems. Laboratory Fee. 4 credit hours.

†BI 516 Biophysics II with Laboratory
Prerequisites: CH 116, BI 362, PH 104, PH 106, M 116. Physical laws and theories as related to muscle, skeletal, sense organ, nerve and other physiological actions. Laboratory fee. 4 credit hours.

†BI 517-518 Biotechniques
Prerequisites: biology major, consent of the instructor. Clinical and research techniques used in the biological sciences. Advanced microscopy, photomicroscopy, cell and tissue culturation, clinical techniques and instrumental procedures. Laboratory fee. 6 credit hours.

***BI 519 Pharmacology with Laboratory**
Prerequisites: BI 122 or BI 251-252; BI 361 or CH 302. Science of medicinals and other chemicals and their effects produced by use and abuse on living organisms, and the mechanisms whereby these effects are produced. Relation of structure to activity, methods of assay and metabolic pathways involved. Laboratory fee. 4 credit hours.

***BI 521 Toxicology with Laboratory**
Prerequisites: BI 122 or BI 251-252; BI 361 or CH 202, CH 211. The action of chemicals on living organisms. Relation of structure to activity, mechanisms of detoxification and reason for activity are studied. Methods of isolation, identification and characterization from tissues, toxic limits, methods of assay, types of antidotes. Laboratory fee. 4 credit hours.

†BI 524 Psychobiology
Prerequisites: P 111, BI 122, BI 132, CH 116. A study of the biological factors of behavior, with concepts drawn from numerous related disciplines such as physiology, pharmacology, ethnology, ecology, anthropology, psychology and biochemistry. 3 credit hours.

BI 561-562 Advanced Biochemistry
Prerequisite: BI 362. An in depth discussion of current topics in biochemistry and molecular biology. 6 credit hours.

BI 591-592 Seminar
Prerequisite: biology major in junior or senior year. One hour weekly meetings during which a research paper is reviewed by a member of the class. Each student, with his advisor, must select an article in a biological periodical from which is developed a 20-minute discourse on its contents. 2 credit hours.

BI 595-596 Laboratory Research
Prerequisites: biology major, consent of the department. Choice of a research topic, literature search, planning of experiments, experimentation and correlation of results in a written report, under the guidance of a department faculty member. Three hours of work per week required per credit hour. Laboratory fee. 1-6 credit hours.

BI 599 Independent Study
Prerequisites: biology major, consent of the department. Weekly conferences with advisor. Three hours of work per week required per credit hour. Opportunity for the student, under the direction of a faculty member, to explore an area of personal interest. A written report of the work carried out is required. 1-3 credit hours, maximum of 6.

Civil Engineering

CE 201 Statics
Prerequisites: PH 150, M 118 (M 118 may be taken concurrently). Composition and resolution of forces in two and three dimensions. Equilibrium of forces in stationary systems. Analysis of trusses. Centroids and second moments of areas, distributed forces, friction, shear and bending moment diagrams. 3 credit hours.

CE 202 Strength of Materials I
Prerequisite: CE 201. Elastic behavior of structural elements under axial, flexural and torsional loading. Stress in and deformation of members, including beams. Lectures supplemented with laboratory demonstrations. 3 credit hours.

COURSES

CE 203 Elementary Surveying
Theory and practice of surveying measurements using tape, level and transit. Field practice in traverse surveys and leveling. Traverse adjustment and area computations. Adjustment of instruments, error analysis. Laboratory Fee. 3 credit hours.

CE 301 Transportation Engineering
A study of planning, design and construction of transportation systems including highways, airports, railroads, rapid transit systems and waterways. 3 credit hours.

CE 302 Building Construction
Introduction to the legal, economic, architectural, structural, mechanical and electrical aspects of building construction. Principles of site planning, drawing and specification preparation and cost estimating. 3 credit hours.

CE 304 Soil Mechanics
Prerequisites: M 203, CE 202. Geological process of soil formation. Soil classifications. Physical properties are related to the principles underlying the potential behavior of soils subjected to various loading conditions. Methods of subsurface exploration. Laboratory demonstrations. 3 credit hours.

CE 305 Highway Engineering
Prerequisite: CE 301 or consent of instructor. Highway economics and financing. Study of highway planning, geometric design and capacity. Pavement and drainage design. 3 credit hours.

CE 306 Hydraulics
Prerequisite: ME 204. The mechanics of fluids and fluid flow. Fluid statics, laminar and turbulent flow. Impulse and momentum. Flow in pipes and open channels. Orifices and weirs. 3 credit hours.

CE 312 Structural Analysis
Prerequisites: CE 202, IE 102, ME 204 (may be taken concurrently). Basic structural engineering topics on the analysis of design of structures. Topics include load criteria and influence lines; force and deflection analysis of beams and trusses; analysis of indeterminate structures by approximate methods, superposition and moment distribution. Framing systems of existing structures are studied. 3 credit hours.

CE 315 Environmental Engineering and Sanitation
Introduction into hydrology; population and water demand projections; water and wastewater transport systems. Problems concerning public health, water and wastewater treatment, solid waste disposal, air pollution, and private water supply and sanitary disposal systems. 3 credit hours.

CE 316 Code Administration
Study of codes and regulations prepared and enacted for the public and employee safety along with the codes and regulations implemented to develop a uniform and balanced land development and usage program. Health codes, labor laws, zoning regulations, planning regulations and wetlands regulations are discussed. 3 credit hours.

CE 317 Structural Design Fundamentals
Prerequisites: CE 312 or consent of the instructor, IE 102. Fundamentals of structural behavior of members, connections and structural systems of steel and concrete. Effect on members of a variety of loading conditions varying from dead load through overloads producing failure. 3 credit hours.

CE 318 Route Surveying
Prerequisite: CE 203. A continuation of elementary surveying covering principles of route surveying, stadia surveys, triangulation, trilateration, practical astronomy, aerial photography, adjustment of instruments. Field problems related to classwork and computer application to surveying problems. 3 credit hours.

CE 320 Civil Engineering Practice
Prerequisite: second semester junior or first semester senior status. Students are exposed to actual engineering projects by visiting an engineering office during the semester on a regular schedule. 1 credit hour.

CE 321 Wood Engineering
Prerequisite: CE 202. Study of the growth and structure of wood and its influence on strength and durability, preservation and fire protection. The analysis and design of structural members of wood including beams, columns, and trusses; connections; glulam and plywood members. The design of wood structures including buildings and bridges. 3 credit hours.

CE 322 Masonry Engineering
Prerequisite: CE 202. The design and analysis of brick and concrete masonry non-reinforced and reinforced structures. Strength, thermal, fire and sound characteristics, testing and specifications. 3 credit hours.

CE 323 Civil Engineering Lab I
Prerequisites: CE 312 which may be taken concurrently. Experiments covering mechanics and structural engineering. The response of metals, concrete and wood to different loading conditions will be examined. Laboratory instrumentation will be studied. Laboratory procedures, data collection, interpretation and presentation will be emphasized. 2 credit hours with 3-credit hour charge.

CE 324 Civil Engineering Lab II
Prerequisites: CE 304, (may be taken concurrently), CE 306, CE 315. Experiments and testing in the areas of soil mechanics, hydraulics and environmental engineering. Laboratory procedures, data collection and interpretation and presentation of data will be emphasized. 2 credit hours with 3-credit hour charge.

CE 401 Foundation Design and Construction
Prerequisite: CE 304 or consent of the instructor. Application of soil mechanics to foundation design, stability, settlement. Selection of foundation type—shallow footings, deep foundations, pile foundations, mat foundations. Subsurface exploration. 3 credit hours.

CE 402 Water Resources Engineering
Prerequisites: CE 306 (may be taken concurrently), CE 315. Study of principles of water resources engineering including surface and ground water hydrology. Design of water supply, flood control and hydroelectric reservoirs. Hydraulics and design of water supply distribution and drainage collection systems including pump and turbine design. Principles of probability concepts in the design of hydraulic structures. General review of water and pollution control laws. 3 credit hours.

CE 403 City Planning
Engineering, social, economic, political and legal aspects of city planning. Emphasis placed on case studies of communities in Connecticut. Zoning. Principles and policies of redevelopment. 3 credit hours.

CE 404 Sanitary Engineering
Prerequisites: CE 306 (may be taken concurrently), CE 315. Study of physical, chemical and biological aspects of water quality and pollution control. Study of unit processes and operations of water and waste water treatment including industrial waste and sludge processing. Design of water treatment and sewage treatment systems including sludge treatment and incineration. 3 credit hours.

CE 405 Indeterminate Structures
Prerequisite: ME 307 or CE 312; IE 102, ME 204. The analysis of statically indeterminate structures. Topics include approximate methods, moment distribution, conjugate beam, energy methods, influence lines and an introduction to matrix methods. 3 credit hours.

CE 407 Contracts and Specifications
Senior status, or permission of instructor. Principles of contract formation, execution and termination. Study of specifications and practice in their preparation. Other legal matters of importance to engineers. 3 credit hours.

CE 408 Steel Design and Construction
Prerequisite: CE 317. Analysis, design and construction of steel structures. Topics include tension, compression and flexural members; connections; members subjected to torsion; beam-columns; fabrication, erection and shop practice. 3 credit hours.

CE 409 Concrete Design and Construction
Prerequisite: CE 317. Analysis and design of reinforced concrete beams, columns, slabs, footings, retaining walls. Basic principles of prestressed and precast concrete. Fundamentals of engineering drawings. 3 credit hours.

CE 410 Land Surveying
Prerequisite: consent of instructor. A study of boundary control and legal aspects of land surveying, including deed research, evidence of boundary location, deed description and riparian rights. Theory of measurement and errors, position precision, plane coordinate systems. 3 credit hours.

CE 501 Senior Project
Prerequisite: senior status. Supervised individual or group project. The project may be the preparation of a set of contract documents for the construction of a civil engineering facility, research work with a report, or a project approved by the faculty advisor. 3 credit hours.

CE 599 Independent Study
Prerequisites: consent of instructor and chairman of department. Opportunity for the student to explore an area of interest under the direction of a faculty member. Course must be initiated by the student, and have the approval of the faculty advisor and chairman. 1-3 credit hours.

Chemistry

The courses marked with an asterisk (*) may, at times, be scheduled in the evening. The courses marked with a dagger (†) are offered at the discretion of the department.

CH 103 Introduction to General Chemistry
An introductory course for students without a high school chemistry background. The course deals with inorganic chemistry, elements, compounds, balancing equations, stoichiometry, nomenclature, chemical bonding, the periodic table, and solutions. CH 104 is taken concurrently with CH 103. 3 credit hours.

COURSES

CH 104 Introduction to General Chemistry Laboratory
To be taken with CH 103. Experiments include the measurement of physical properties, determination of percentage of composition and chemical formulas, reactions of representative elements, ionic reactions and the quantitation of acids and bases. Laboratory Fee. 1 credit hour.

***CH 107 Elementary Organic Chemistry**
Prerequisite: CH 103, CH 104 or CH 115, CH 117 or consent of the department. A one-semester introduction to one of the major fields of chemistry designed for students not majoring in chemistry. Nomenclature, structure and the principal reactions of aliphatic and aromatic organic chemistry will be studied. 3 credit hours.

***CH 108 Elementary Organic Chemistry Laboratory**
Prerequisite: CH 103, CH 104 or CH 115, CH 117 or consent of the instructor. A laboratory course designed to accompany CH 107. The principal operations of organic synthesis such as refluxing, distillation, filtration and crystallization, are studied and applied in a number of simple preparations. Laboratory Fee. 1 credit hour.

†CH 109 Consumer Chemistry
Prerequisite: CH 103 or consent of the instructor. This is a general course dealing with the physical and chemical properties of substances used daily such as paints, plastics, cosmetics, vitamins, antibiotics, hormones and poisonous substances. 3 credit hours.

***CH 110 Environmental Chemistry**
Prerequisite: CH 115, CH 117 or consent of the instructor. A survey of the principal environmental contaminants and pollutants of air and water, including heavy metals, radioactive particles, insecticides, detergents and others. Chemistry sufficient to understand the properties of these materials and possible routes to their control will be introduced. 3 credit hours.

†CH 111 History of Chemistry
Prerequisite: CH 103 or consent of the instructor. The history of chemistry, beginning with ancient civilization through the middle ages. The discovery of the various elements and the periodic tables. The lives of chemistry's great men and women and their principal discoveries. Chemistry's contribution to the atomic age. 3 credit hours.

CH 115 General Chemistry I
Prerequisite: CH 103 or one unit of high school chemistry or written qualifying exam. Brief review of fundamentals including stoichiometry and chemical bonding. Thermochemistry, electrochemistry, nuclear chemistry, gases, and introduction to inorganic chemistry and coordination compounds. CH 117 is taken concurrently with CH 115. 3 credit hours.

CH 116 General Chemistry II
Prerequisite: CH 115, CH 117. Rates of chemical reactions; chemical equilibria including pH, acid-base, common ion effect, buffers, and solubility products; an introduction to organic and biochemistry. CH 118 is taken concurrently with CH 116. 3 credit hours.

CH 117 General Chemistry I Laboratory
To be taken with CH 115. Experiments include stoichiometry and basic physical chemistry experiments in thermochemistry and electrochemistry. Oxidation-reduction reactions, corrosion chemistry, and coordination chemistry. Laboratory Fee. 1 credit hour.

CH 118 General Chemistry II Laboratory
To be taken with CH 116. Experiments include the quantitative measurement of chemical rates and ionic equilibrium constants. The common ion effect, pH and buffers are investigated. The course concludes with several weeks of semimicro qualitative analysis and a simple organic synthesis. Laboratory Fee. 1 credit hour.

†CH 120 Chemistry of Addicting and Hallucinogenic Drugs
Prerequisite: CH 103 or consent of the instructor. The properties, dosages, preparation and reactions of the addicting and hallucinogenic drugs. Alcohol, caffeine, nicotine, sedatives, stimulants, tranquilizers, LSD, mescaline, cannabis, narcotics and antidepressants. 3 credit hours.

CH 201-202 Organic Chemistry I and II
Prerequisite: CH 116, CH 118. The common reactions of aliphatic and aromatic chemistry with emphasis on functional groups and reaction mechanisms. CH 203 and CH 204 are taken concurrently with CH 201-202. 6 credit hours.

CH 203-204 Organic Chemistry I and II Laboratory
To be taken with CH 201-202. The techniques, reactions, and syntheses commonly employed in the organic chemistry laboratory are covered. Laboratory Fee. 2 credit hours.

***CH 211 Quantitative Analysis with Laboratory**
Prerequisites: CH 116, CH 118. Theory and laboratory training in the preparation of solutions, volumetric, gravimetric, and spectrophotometric methods of analysis. Analysis of ores and ion-exchange chromatography are included. Laboratory Fee. 4 credit hours.

***CH 221 Instrumental Methods of Analysis with Laboratory**
Prerequisites: CH 211, CH 201, CH 203. The theory of various instrumental methods, including visible, ultraviolet and infrared spectroscopy, gas chromatography, potentiometry, mass spectrometry and nuclear magnetic resonance spectroscopy. Laboratory identification of compounds by the methods discussed in the lectures. Laboratory Fee. 4 credit hours.

†CH 321-322 Plastics and Polymer Chemistry I and II
Prerequisites: CH 116, CH 118, CH 202, CH 204. All phases of the plastics and polymers field, including the chemistry involved, methods of production, physical properties and the uses of specific polymers. 6 credit hours.

***CH 331-332 Physical Chemistry I and II with Laboratory**
Prerequisites: CH 202, CH 204, CH 211, CH 221. Kinetic theory of gases, thermodynamics, phase equilibria, transport and surface phenomena, kinetics, quantum mechanics, atomic and molecular spectroscopy. Appropriate laboratory experiments are performed for each major topic. Laboratory Fee. 8 credit hours.

***CH 351 Qualitative Organic Analysis with Laboratory**
Prerequisite: CH 202, CH 204, CH 221. A one-semester laboratory course dealing with the systematic identification of organic compounds. Specific methods include wet analysis, derivatization, and physical analysis such as refractometry and molecular spectroscopy. Laboratory Fee. 4 credit hours.

CH 411 Seminar I
Prerequisites: CH 202, CH 204, CH 332. Acquaints the student with the chemical literature and its use. Assignments include library searches and the presentation of a short seminar on a special topic approved by the faculty. 1 credit hour.

CH 412 Seminar II
Prerequisite: CH 411. The student researches a specific current topic in chemical research or applied chemistry and presents a term paper and a formal full-length seminar to the faculty and students. 1 credit hour.

†CH 441 Analytical Chemistry with Laboratory
Prerequisite: CH 221. Corequisite: CH 332. Application of instrumental methods to inorganic and organic methods of analysis not covered in CH 221, including mass, ultraviolet and infrared spectrophotometry, chromatography and electrochemical analysis. Application of on-line digital computers to chemical analysis. 4 credit hours.

CH 451 Thesis
Prerequisites: CH 202, CH 204, CH 211, CH 221, CH 332. An original investigation in the laboratory or library under the guidance of a member of the department. A final thesis report is submitted. Laboratory Fee. 4 credit hours.

CH 471 Industrial Chemistry
Prerequisites: CH 202, CH 211, CH 221, CH 332. A course to bridge the gap from the academic to the industrial world. Topics include: material accounting, energy accounting, chemical transport, reactor design, process development and control. 3 credit hours.

***CH 501 Advanced Organic Chemistry I**
Prerequisites: CH 202, CH 204. The course deals with such topics as chemical bonding and molecular structure, investigation of mechanism, nucleophilic substitution, electrophilic aromatic substitution, eliminations, symmetry controlled reactions, and Hammett plots. 3 credit hours.

***CH 502 Advanced Organic Chemistry II**
Prerequisites: CH 202, CH 204. The course deals primarily with synthetic organic chemistry and includes oxidation, reduction, alkylation, addition, substitution, and multistep syntheses. 3 credit hours.

***CH 521 Advanced Inorganic Chemistry I**
Prerequisite: CH 331. Corequisite: CH 332. The chemistry of coordination compounds: molecular and electronic structures, stereochemistry, valence bond, ligand field, and molecular orbital theories, thermal and photochemical reactions and mechanisms. 3 credit hours.

***CH 522 Advanced Inorganic Chemistry II**
Prerequisite: CH 331. Corequisite: CH 332. The chemistry of the main group elements, lanthanides, and actinides: bonding, structure and properties, synthesis, acid-base theories, crystal structures, cage and cluster compounds. 3 credit hours.

CH 523-524 Advanced Inorganic Chemistry I and II Laboratory
Corequisites: CH 521, CH 522. Experiments are performed in conjunction with material presented in CH 521 and CH 522. Included are inorganic syntheses, resolution of diastereomers, conductance measurements, determination and interpretation of infrared, ultraviolet, mass, and nuclear magnetic resonance spectra of inorganic compounds, and photochemistry. Laboratory Fee. 2 credit hours.

†CH 533 Advanced Physical Chemistry
Prerequisites: CH 332. Emphasis on the fundamentals of quantum mechanics, statistical mechanics, molecular bonding theory and spectroscopy. 3 credit hours.

†CH 561 Chemical Spectroscopy
Prerequisite: CH 332. Introduction to the elementary theory with emphasis on techniques and interpretation of data obtained in applications of infrared, Raman, visible, ultraviolet, nuclear quadrupole, electron spin and nuclear magnetic resonance spectroscopy to the solution of chemical problems. 3 credit hours.

COURSES

CH 599 Independent Study
Prerequisite: Consent of faculty member. Opportunity for the student under the direction of a faculty member to explore an area of interest. This course may be used to do preliminary work on the topic studied for Thesis, CH 451. 1-3 credit hours.

Criminal Justice

CJ 101 Introduction to Criminal Justice
Survey of criminal justice system with emphasis upon prosecution, corrections and societal reaction to offenders. Retribution, rehabilitation, deterrence, and incapacitation serve as generic frames of reference and theoretical points of departure for analyzing the dispositional and correctional processes. 3 credit hours.

CJ 102 Criminal Law
The scope, purpose and definitions of substantive criminal law: criminal liability, major elements of statutory and common law offenses (with some reference to the Connecticut Penal Code) and significant defenses. 3 credit hours.

CJ 105 Introduction to Security
A general survey of the major historical, legal and practical developments and problems of security. The course will stress the components, organization and objectives of security, the trend toward professionalization, the role of security in the public and private sectors and its relationship to management. 3 credit hours.

CJ 112 Security Methods
The course will review the procedures and techniques of modern security methods. It will focus on physical security, procedural controls, human, conponents, security surveys, preventive methods, investigative methods, and technological developments. The emphasis will be on planning, organization, implementation, and system development. 3 credit hours.

CJ 201 Principles of Criminal Investigation
An introduction to criminal investigation in the field. Conducting the crime scene search, interview of witnesses, interrogation of suspects, methods of surveillance and the special techniques employed in particular kinds of investigation. 3 credit hours.

CJ 203 Security Administration
This course will present an overview of security systems found in retail, industrial and governmental agencies, the legal framework for security operations, and the administrative and procedural processes in security management. 3 credit hours.

CJ 204 Forensic Photography with Laboratory
An introduction to basic techniques, material and other aspects of crime scene photographs. Theory and practice of photographic image formation and recordings. Laboratory exercises with emphasis on homicide, sex offenses, arson and accident photograph techniques. Laboratory fee. 3 credit hours.

CJ 205 Interpersonal Relations
Prerequisite: P 111. Theories, conceptual models and research related to interpersonal relations. Topics include reciprocal theory, attitudes and labeling theory. 3 credit hours.

CJ 209 Correctional Treatment Programs
Prerequisites: CJ 100, CJ 101. Various treatment modalities employed in the rehabilitation of offenders. Field visits to various correctional treatment facilities such as half-way houses and community-based treatment programs. 3 credit hours.

CJ 215 Introduction to Forensic Science
Prerequisite: CJ 201. A classroom lecture/discussion session and a laboratory period. Topics include the recognition, identification, individualization and evaluation of physical evidence such as hairs, fibers, chemicals, narcotics, blood, semen, glass, soil, fingerprints, documents, firearms and tool marks. Laboratory Fee. 3 credit hours.

CJ 217 Criminal Procedure I
Prerequisites: CJ 100, CJ 101, CJ 102. An inquiry into the nature and scope of the U.S. Constitution as it relates to criminal procedures. Areas discussed include the law of search and seizure arrests, confessions and identification. 3 credit hours.

CJ 218 Criminal Procedure II and Evidence
Prerequisites: CJ 100, CJ 101, CJ 102, CJ 217. Legal doctrines, employed in controlling the successive stages of the criminal process. Rules of law related to wiretapping and lineups, pretrial decision making, juvenile justice and trial. 3 credit hours.

CJ 220 Legal Issues in Corrections
Prerequisites: CJ 100, CJ 101, CJ 217, junior status. An examination of the legal foundation of correctional practice and a review of recent judicial decisions which are altering the correctional environment. An analysis of the factors and forces which are creating a climate of significant reform in corrections. 3 credit hours.

CJ 221 Juvenile Justice System
Prerequisites: CJ 100, CJ 101, P 111, SO 113. An analysis of stages and decisions made at critical junctures of the juvenile justice process. Topics include an analysis of Supreme Court treatment of juvenile justice issues, and the ability of the juvenile justice system to respond to juvenile crime. The focus of the course is on the processing of juveniles through the system, and the special problems unique to juvenile justice. 3 credit hours.

CJ 226 Industrial Security
Prerequisite: CJ 105. Concepts of security as it integrates with industrial management systems will be presented along with industrial security requirements and standards, alarms and surveillance devices, animate security approaches, costing, planning and engineering. Principles of safety practices and regulations will be covered, as well as fire prevention, property conservation, occupational hazards and personal safeguards. 3 credit hours.

CJ 227 Fingerprints with Laboratory
Prerequisites: CJ 201, CJ 215. This course will study the genetics and mathematical theory relating to fingerprints, chemical and physical methods used in developing latent fingerprints, and major systems of fingerprint classification. Laboratory Fee. 3 credit hours.

CJ 300 Foundations of Justice
Prerequisites: CJ 100, CJ 101. This course is intended to examine the major philosophical postulates as they pertain to the development of western legal thought. 3 credit hours.

CJ 301 Group Dynamics in Criminal Justice
Prerequisites: CJ 205, CJ 206, P 111. An analysis of theory and applied methods in the area of group process. Focus on both individual roles and group development as they relate to criminal justice issues. Experiential exercises are included. 3 credit hours.

CJ 303-304 Forensic Science Laboratory I and II
Prerequisite: CJ 215. Specific examination of topics and laboratory testing procedures introduced in CJ 215. In the classroom, laboratory procedures are outlined and discussed. Identification and individualization of evidence; casting of hairs and fibers for microscopic identification; electrophortic separation of blood enzymes. Laboratory Fee. 6 credit hours.

CJ 306 Security Problems Seminar
Prerequisite: CJ 105, CJ 203. An analysis of special problem areas including college and university campuses, hospitals, hotel/motels, etc. Also, special problems concerning computer protection, bank security, executive personnel protection, credit cards, case law and legal aspects, control of proprietary information and white collar crime. 3 credit hours.

CJ 311 Criminology
Prerequisites: CJ 100, CJ 101, P 111, SO 113. An examination of principles and concepts of criminal behavior; criminological theory; the nature, extent and distribution of crime; legal and societal reaction to crime. Same course as SO 311. 3 credit hours.

CJ 400 Criminal Justice Problems Seminar.
Prerequisites: CJ 100, CJ 101, CJ 300. An examination of theoretical and philosophical issues affecting the administration of justice: the problems of reconciling legal and theoretical ideals in various sectors of the criminal justice system with the realities of practice. 3 credit hours.

CJ 402 Police in Society
Prerequisites: CJ 100, CJ 101, CJ 300. This course will acquaint the student with the major developments and trends of policing in a free society. Emphasis will be placed on American police and the role of the police in a democracy. Further emphasis will be placed on the examination of the interactions between the police and the communities they serve. 3 credit hours.

CJ 405-407 Seminar in Criminal Justice
Prerequisite: senior status. An intensive analysis of variable topics of critical relevance in the administration of justice: a seminar exposing the student to a concentrated learning experience conducive to acquiring special expertise in a special academic area. 3 credit hours.

CJ 408 Correctional Counseling
Prerequisites: CJ 205, CJ 209, CJ 301. This course is designed to provide students with the knowledge of basic counseling and evaluation theory, methods, and research as applied to a correctional setting. 3 credit hours.

CJ 415 Document and Firearms Examination
Prerequisites: CJ 201, CJ 215. A study of the methods and techniques in document and firearms examination. Includes an understanding of the chemical, physical and microscopic principles through laboratory exercises. 3 credit hours.

CJ 416 Seminar in Forensic Science
Prerequisites: CJ 201, CJ 215. An examination and evaluation of current issues in the law enforcement science field. The course is also designed to aid in understanding how various physical evidence can be utilized as an investigative tool. And, a review of modern analytical techniques and their application in law enforcement science. 3 credit hours.

CJ 498 Research Project
Prerequisite: consent of the department chairman. The student carries out an original research project in a criminal justice setting and reports the findings. 3 credit hours.

CJ 501 Criminal Justice Internship
Prerequisite: consent of the department chairman. This program provides monitored field experience with selected federal, state or local criminal justice agencies or forensic science laboratories subject to academic guidance and review. 3 credit hours.

CJ 599 Independent Study
Prerequisite: consent of the department chairman. An opportunity for the student, under the direction of a faculty member, to explore and acquire competence in a special area of interest. 1-3 credit hours.

COURSES

Communication

CO 100 Human Communication
The basic course in communication. Objectives are to create within each student an awareness of the omnipresence of communication and the problems surrounding the human communication process. Recommended for all UNH students, regardless of major field of study. 3 credit hours.

CO 101 Fundamentals of Mass Communication
Prerequisite: CO 100. An introduction to the mass media of newspapers, film, magazines, radio, television, trade publications, and public relations. Course emphasizes media's impact upon society. 3 credit hours.

CO 103 Audio in Media
Concerned with sound as used in radio, television and film. The course entails lectures, demonstration, and lab practice of sound production and transmission. Laboratory fee. 3 credit hours.

CO 200 Theories of Group Communication
Theoretical aspects of communication which affect the accomplishment of group tasks, and techniques of observation of group processes, particularly within the framework of media production crews. 3 credit hours.

CO 203 Radio Production
Prerequisite: CO 103. Theory and practice of techniques involved in the function and operation of a radio station. Microphone techniques, engineering operations, transmitter readings, logging and programming will be included. Laboratory fee. 3 credit hours.

CO 208 Introduction to Broadcasting
The student experiences scriptwriting and voice, diction, and articulation drills. He learns the place of each member of the team in attaining the broadcast objectives. 3 credit hours.

CO 212 Television Production I
Prerequisites: CO 103, CO 208. Introduction to the mechanics, techniques, and aesthetic elements of television production. This course provides the basic grounding in the art and craft of the medium. Laboratory fee. 3 credit hours.

CO 214 Elements of Film
Prerequisite: CO 101 or permission of the instructor. Stresses the understanding of film as a creative form of communication. Student is introduced to basic techniques of motion picture production through lectures, audio-visual activity, and small group involvement. Laboratory fee. 3 credit hours.

CO 220 Film Production I
Prerequisites: CO 103, CO 214. Involves the transformation of an original idea into film: Initial analysis, proposed treatment plan, sequencing, film scripting, pre-production planning, nature of the production process. A short film is produced through team effort. Laboratory fee. 3 credit hours.

CO 300 Persuasive Communication
An examination of the theories of persuasive communication including the influence and effect of communication on the rhetoric of politics, religion, advertising, etc. 3 credit hours.

CO 302 Social Impact of Media
Prerequisite: CO 101. Examines such problems as regulatory control of the media, law and ethics, and the behavioral aspects of mass and interpersonal communication. Students examine the variety of media writing and commence writing their own media messages. 3 credit hours.

CO 307 Writing for Television and Radio
Prerequisite: CO 208. A study of drills and exercises in writing television and radio news, drama, public service announcements, and documentaries. Emphasis is placed on first-hand practical experience assignments and criticism of completed copy. 3 credit hours.

CO 308 Broadcast Journalism
Prerequisite: CO 307. Entails practice in newsgathering, editing, writing, and use of news services and sources. Creating documentary and special event programs through film for television news, on-the-spot film, and video-tape reporting are included. 3 credit hours.

CO 312 Television Production II
Prerequisite: CO 212. An intermediate course designed to provide the student with the opportunity to coordinate the many areas of TV production. Video tape and live production techniques are employed. Laboratory fee. 3 credit hours.

CO 317 Advanced Writing for Radio
Planning and writing longer forms of scripts, emphasizing documentary and dramatic writing for radio production. 3 credit hours.

CO 320 Film Production II
Prerequisite: CO 220. The creative process involved in translating advertising copy to film based upon advertising objectives and consumer motivation, appeals, and behavior. Involves production of filmed "spots" by team efforts. Laboratory fee. 3 credit hours.

CO 327 Dramatic Scriptwriting for Film and Television
Dramatic scriptwriting for film and television will concentrate on dramatic scripts including: how to work a treatment, write dialogue, include camera shots. 3 credit hours.

CO 335 Media Performance
Theory and application of performance techniques. Projects in performance for radio, television and film. 3 credit hours.

CO 340 The History of Film
A survey of the historical development of the film medium consisting of lectures, discussions and the screening of films which demonstrate the interrelationships between the historical development and the establishment of the film medium as a powerful communicative art form. 3 credit hours.

CO 350 Non-Commercial Television
The theory and history of noncommercial television and the organization of a public television station. The function and contribution of the various organizations will be studied in their relationship to the public television sector. The legal restraints and funding structure of public television will be included. The future of public television vis-a-vis cable television and satellite communication will be included. 3 credit hours.

CO 402 Internship
An internship program for students who qualify and would like an infield experience at local radio stations, television stations, advertising agencies, etc. 3 credit hours.

CO 410 Management Communication Seminar
Open to all upper division students, regardless of major. Involves structure and function of communication in organizations. Practice in understanding and managing interpersonal differences. Emphasizes concepts and principles needed for effective management of organizational communication processes. 3 credit hours.

CO 412 Advanced Television Production
Prerequisite: CO 312. The perfection of techniques acquired in CO 215 and CO 216. Essentials of budgeting, marketing, and regulatory policies and rules. Production teams are formed to produce sophisticated local television programs under close supervision. 3 credit hours.

CO 415 Broadcast Management
Prerequisite: CO 208. Involves the administrative and personnel problems of television and radio studio management; broadcast engineering; local sales; continuity; and programming. Discussions will include scheduling and the development of facilities. 3 credit hours.

CO 440-454
Special topics in communication which are of special interest or current interest. 3 credit hours.

CO 599 Independent Study in Communication
Prerequisite: Consent of faculty member and chairman of department. 3-6 hours are usually reserved for a senior project-paper in communication; student may take 1-3 credit hours of CO 599 per semester with a maximum of 6. Independent study credits earned in other departments are applied toward the maximum of 6 in communication. Opportunity for the student under the direction of a faculty member to explore an area of interest. 1-3 credit hours.

English

Note: E 105 and E 110 are prerequisites for all literature courses.

E 101 Reading Strategies
Intensive work to improve reading comprehension and speed. No credit. Laboratory fee.

E 103 English Fundamentals
(Students who earn an A or a B will not be required to take E 105.)
Designed to increase awareness of the structure of English. Intensive practice in writing to improve the student's ability to construct effective sentences and paragraphs. 3 credit hours, 6 class hours per week.

E 105 Composition
Prerequisite: satisfactory grade on English placement test or E 103. Analytical study of essays for the purpose of improving skills of written communication. Practice in writing in a variety of rhetorical modes with emphasis upon clarity and precision. 3 credit hours.

E 110 Composition and Literature
Prerequisite: E 105 or placement by the English department. Reading, analyzing, and interpreting literature in three basic genres: fiction, poetry, and drama. Writing analytical and critical essays to strengthen skills of written communication and awareness of the human condition. 3 credit hours.

E 114 Speech
A disciplined approach to oral communication for freshmen. Objectives are to develop proficiency in locating, organizing and presenting material and to help the student gain confidence and fluency when speaking extemporaneously. Students beyond the freshman year should take E 230. 3 credit hours.

E 200 Speedreading
A course to increase reading speed and improve memory and cognitive skills. 1 credit hour. Laboratory fee.

E 201 The Western Tradition in Literature I
Selected translations of European prose, poetry and drama from Homer through the Middle Ages. 3 credit hours.

E 202 The Western Tradition in Literature II
Selected translations of European prose poetry, and drama from the Renaissance to the twentieth century. 3 credit hours.

COURSES

E 211 Survey of English Literature I
A survey of English literature from its beginnings through the Neoclassic era, with emphasis on Chaucer, Shakespeare, Milton and Pope. 3 credit hours.

E 212 Survey of English Literature II
A survey of English literature from the Romantic era to the present. Writers studied include Wordsworth, Keats, Arnold, Joyce and Lawrence. 3 credit hours.

E 213 Survey of American Literature I
Intellectual and literary movements from Colonial times to the 1850's. Writers studied include Poe, Emerson, Thoreau, Hawthorne, Melville and Whitman. 3 credit hours.

E 214 Survey of American Literature II
American literature from Mark Twain to the present. Writers studied include Henry James, T.S. Eliot, Frost, O'Neill, Faulkner and Hemingway. 3 credit hours.

E 217 Survey of Black American Literature I
Reading of Black American poets, novelists, essayists and dramatists from the Colonial era through the early twentieth century. Writers studied include Frederick Douglass, Charles Waddell Chesnutt, Paul Dunbar and W.E.B. DuBois. 3 credit hours.

E 218 Survey of Black American Literature II
Reading of Black American writers since 1930, including Richard Wright, Countee Cullen, James Baldwin, Imamu Baraka and Gwendolyn Brooks. 3 credit hours.

E 220 Writing for Business and Industry
Prerequisite: E 105. Intensive practice in the various types of writing required of executives, businessmen, engineers and other professionals, with emphasis on business letters, resumes, internal and external reports, evaluations and recommendations, descriptions of procedures and processes. 3 credit hours.

E 225 Technical Writing
Intensive practice in the common forms of technical writing, with emphasis on technical description and the writing of reports and manuals. 3 credit hours.

E 230 Public Speaking and Group Discussion
Objectives are to develop proficiency in organizing and presenting material, and to give practice in speaking, group interaction, conference management and small group discussion. 3 credit hours.

E 250 Expository Writing
Intensive practice in writing that explains. Emphasis on gathering information, establishing credibility, and attaining clarity, coherence, and point. 3 credit hours.

E 260 The Short Story
A critical study of the best stories of American and British writers as well as stories, in translation, of writers of other nationalities. 3 credit hours.

E 261 The Essay
Writing of several types of essays; study of contemporary essays and great essays of the past. Particular attention paid to organization, methods of development, and style. 3 credit hours.

E 267 Creative Writing I
Imaginative exploration of both prose and verse; practice in writing various short forms of each; particular attention to concrete imagery, effective use of verbal sounds, clarity of thought, and the development of style. 3 credit hours.

E 268 Creative Writing II
Emphasis on the elements of short fiction and drama; secondary attention to related forms. 3 credit hours.

E 270 Forms of Contemporary Culture
A study of contemporary culture in a variety of forms, including drama, films, TV, periodicals, music, art. Students will be expected to attend performances and exhibitions. The goal of the course is to give the student a better understanding of the scope and meaning of contemporary cultural phenomena and to further the development of the critical sensibility. 3 credit hours.

E 275 Film Studies
A consideration of significant full-length feature films selected to represent a national school of filmmaking, a genre, the respective crafts of directors, performers and script-writers. Films will be shown in class and studied at the rate of about one a week. 3 credit hours.

E 281 Science Fiction
A survey of the development of science fiction during the nineteenth and twentieth centuries. Reading of American, English and European science fiction novels and short stories. 3 credit hours.

E 302 History of the English Language
The structure and development of English, including Indo-European origins and elements of Anglo-Saxon. Emphasis on Middle English and the transition to Modern English. Study of the distinctive coinages of American English. 3 credit hours.

E 323 The Renaissance in England
Major writers of the English Renaissance, in poetry and prose, from Wyatt and Surrey in the early sixteenth century through Sidney and Spenser to Donne and Milton. 3 credit hours.

E 341 Shakespeare I
An analysis of representative history plays, early comedies and tragedies. 3 credit hours.

E 342 Shakespeare II
An analysis of representative later plays. 3 credit hours.

E 353 Literature of the Romantic Era
Poetry and prose of the major Romantics—Wordsworth, Coleridge, Byron, Shelley, Keats, Lamb, and Hazlitt—with attention given to the milieu of the writers, the Continental background and theories of Romanticism. 3 credit hours.

E 356 Later Nineteenth-Century English Literature
Poetry and prose from 1830-1900. The works of Tennyson, Browning, Arnold, Swinburne, Carlyle, Mill, Newman, Ruskin and others studied in the light of the social, political and religious problems of the period. 3 credit hours.

E 361 Modern British Literature
British fiction, drama and poetry from 1900 to the present. May include works of Conrad, Joyce, Lawrence, Woolf, Huxley, Forster, Shaw, Yeats, Auden, Spender and Dylan Thomas. 3 credit hours.

E 362 The Age of Donne and Milton
Major writers of prose and poetry during the period 1600-1660: Donne, Milton, Burton, Bacon, Herbert and others. 3 credit hours.

E 371 Literature of the Neoclassic Era
British writers of the period 1660-1789, with emphasis upon Dryden, Pope, Swift and Johnson. 3 credit hours.

E 375 The Age of Chaucer
A detailed reading and critical study of Chaucer's *Canterbury Tales*, with some study of his predecessors and the medieval cultural milieu. 3 credit hours.

E 390 The English Novel I
The development of the novel in England from Defoe to Dickens and Thackeray. 3 credit hours.

E 391 The English Novel II
The development of the novel in England from George Eliot and Hardy to the present. 3 credit hours.

E 392 Poe, Hawthorne and Melville
A study of the poetry and fiction of the major representatives of the tragic outlook on life in mid-nineteenth century American literature. Poe, Hawthorne and Melville. 3 credit hours.

E 393 The American Transcendentalists
An intensive study of the affirmative tradition in mid-nineteenth century American literature, with particular attention to the principal figures: Emerson, Thoreau and Whitman. 3 credit hours.

E 395 American Realism and Naturalism
Readings in the works of such major realists as Howells, Twain, and James and important naturalist successors such as Frank Norris, Stephen Crane and Theodore Dreiser. 3 credit hours.

E 402 Modern Poetry
A study of the works of representative twentieth-century British, American and Continental poets. 3 credit hours.

E 405 Modern Drama
Principal movements in Continental, British and American drama from Ibsen to the present. 3 credit hours.

E 406-409 Continental Literature
Selected poetry, drama and fiction, in translation, of the European masters, primarily Russian, French, German or Spanish. Topic to be announced for each semester. 3 credit hours each course.

E 477 American Literature Between World Wars
A study of the achievements of the main figures of the heroic generation that flourished between the two world wars and brought about "Americas's Coming of Age." Poets Ezra Pound, T.S. Eliot, Robert Frost, Wallace Stevens and William Carlos Williams; novelists Hemingway, Faulkner, Fitzgerald. 3 credit hours.

E 478 Contemporary American Literature
Intensive study of recent American fiction, poetry and drama. 3 credit hours.

E 480 Internship
A work experience, arranged through the department, that will require the effective use of written or spoken English.

E 481-498 Studies in Literature
Special topics in literature, which may include concentration upon a single figure, a group of writers or a literary theme. 3 credit hours each course.

E 599 Independent Study
Prerequisites: consent of the instructor and the chairman of the department; restricted to juniors and seniors who have at least a 3.0 quality point ratio. Opportunity for the student under the direction of a faculty member to explore an area of interest. This course must be initiated by the student. 1-3 credit hours per semester.

COURSES

Economics

EC 133 Principles of Economics I
Foundations of economic analysis, including economic progress, resources, technology, private enterprise, profits and the price system. Macroeconomics including national income, employment and economic growth. Price levels, money and banking, the Federal Reserve System, theory of income, employment and prices, business cycles and problems of monetary, fiscal and stabilization policy. 3 credit hours.

EC 134 Principles of Economics II
Prerequisite: EC 133. Microeconomics including markets and market structure and the allocation of resources. The distribution of income, the public economy, the international economy and the current economic problems. 3 credit hours.

EC 300 Economic History of the U.S.
Development of American economic life in the various stages of agriculture, trade, industry, finance and labor. Change of economic practices and institutions, particularly in business, banking and labor. The changing role of government. 3 credit hours.

EC 310 Principles of Economic Geography
Distribution of resources, industries and population in relation to physical, economic and technological factors. Principles of economic location and regional development. 3 credit hours.

EC 311 Government Regulation of Business
Prerequisites: EC 133, EC 134. An appraisal of public policy toward transportation, trusts, monopolies, public utilities and other forms of government regulation of economic activity. 3 credit hours.

EC 312 Contemporary Economic Problems
The course concerns selected current economic problems: inflation, unemployment, poverty in an affluent society, economic issues in health services, the economics of higher education, current issues in transportation and population. The purpose is to examine and to explore policies to cure these problems. 3 credit hours.

EC 314 Public Finance and Budgeting
Prerequisites: EC 133, EC 134. Theory and practice of public taxation. The budgetary process at all levels of government. 3 credit hours.

EC 315 Economics of Crime
The application of basic economic concepts to such topics as the economic costs of crime, the costs of preventing crime, white collar crime, crimes against property, victimless crimes. 3 credit hours.

EC 320 Mathematical Methods in Economics
Prerequisites: M 115, M 116; or M 115, M 127; or QA 118, QA 128. Applications of various mathematical concepts and techniques in macroeconomic and microeconomic analysis. Special emphasis on the design and interpretation of mathematical models of economic phenomena. 3 credit hours.

EC 336 Money and Banking
Prerequisites: EC 133, EC 134. Nature and function of money, commercial banking system, Federal Reserve System and the Treasury, monetary theory, financial institutions, international financial relationships, history of money and monetary policy in the United States and current problems of monetary policy. 3 credit hours.

EC 340 Microeconomic Analysis
Prerequisites: EC 133, EC 134. Study of the determination of the prices of goods and production factors in a free market economy and the role of prices in the allocation of resources. 3 credit hours.

EC 341 Macroeconomic Analysis
Prerequisites: EC 133, EC 134, A 111. An investigation of the makeup of the national income and an analysis of the factors that enter into its determination. The roles of consumption, investment, government finance and money influencing national income and output, employment, the price level and rate of growth; policies for economic stability and growth. 3 credit hours.

EC 342 International Economics
Prerequisites: EC 133, EC 134. The role, importance and currents of international commerce; the balance of international payments; foreign exchange and international finance; international trade theory; problems of payments adjustment; trade restrictions; international control of raw materials; economic development and foreign aid. 3 credit hours.

EC 345 Comparative Economic Systems
Prerequisites: EC 133, EC 134. A comparative study of the economic organization, resource allocation and growth problems of the United States, British and French economic systems and the economic systems of the U.S.S.R., Poland and Yugoslavia. 3 credit hours.

EC 350 Economics of Labor Relations
Prerequisites: EC 133, EC 134. History of the union movement in the United States, union structure and government, problems of collective bargaining, economics of the labor market, wage theories, unemployment, governmental policy and control and problems of security. 3 credit hours.

EC 410 Econometrics
Prerequisite: EC 320. The application of mathematical and statistical methods of both micro- and macro-economic policy issues. 3 credit hours.

EC 420 Applied Economic Analysis
Prerequisites: EC 133, EC 134. A study of applied economics involves application of the tools of economic analysis to the real-life problems of business firms, government agencies and other organizations. 3 credit hours.

EC 440 Economic Development
Prerequisites: EC 133, EC 134. Economic problems of developing countries and the policies necessary to induce growth. Individual projects required. 3 credit hours.

EC 442 Economic Thought
Prerequisites: EC 133, EC 134. The development of economic doctrine from mercantilism and Adam Smith to the thinking of modern-day theorists. Emphasis upon the main currents of thought with the applicability to present-day problems. Individual study and reporting. 3 credit hours.

EC 450 Thesis
A written report on a research project. No class meetings, but periodic conferences with the thesis supervisor. 3 credit hours.

EC 599 Independent Study
Prerequisite: consent of the department chairman. Independent research projects or other approved forms of independent study. 3 credit hours.

Electrical Engineering

EE 201 Basic Circuit Analysis I
Prerequisites: M 117, Concurrent registration in M 118, PH 150. Energy effects and ideal circuit elements, resistance, capacitance, inductance; active devices, Kirchhoff's Laws, energy conservation; resistive networks, Thevenin/Norton theorems, voltage and current dividers; natural response of first and second-order networks, natural frequencies/poles. 3 credit hours.

EE 202 Basic Circuit Analysis II
Prerequisites: EE 201, M 118. Continuation of EE 201. Forced response, transfer functions, initial conditions, impulse response, complete solutions. Sinusoidal steady state techniques, complex transfer functions. Power, energy, power factor, vars. 3 credit hours.

EE 211-212 Principles of Electrical Engineering I and II
Prerequisites: PH 150, PH 205, M 118 (may be taken concurrently). Circuit variables, resistance, capacitance, inductance, power and energy. Kirchhoff's laws, analysis of circuits, equivalent circuits. Instruments and measurement techniques. Diodes and transistors, amplifiers and wave shaping circuits. Electric and magnetic field effects, forces, torques, motor and generator characteristics, transformers. Digital logic and elements of logic and switching circuit design. EE 212 will include selected laboratory experiments. This course is intended for non-electrical engineering majors. 6 credit hours.

EE 253 Electrical Engineering Laboratory I
Prerequisites EE 202 (may be taken concurrently). Laboratory exercises and projects including resistance, capacitance and inductance measurement, diode, transistor and operational amplifier characteristics. Measurement of electrical parameters. Characteristics and applications of basic electrical laboratory apparatus. Note: Students are charged for a standard three-credit hour course. Laboratory Fee. 2 credit hours.

EE 271 Computer Science
Prerequisite: sophomore standing. Introduction to the organization of digital computers, number and character representation stored-program concept, instruction processing, memory organization, instruction formats, addressing modes, instruction sets, assembler and machine language programming. Input/Output programming, direct memory access. Bus structures and control signals. 3 credit hours.

EE 301 Network Analysis
Prerequisites: EE 202, M 203. Properties of transfer functions; frequency response curves, bandwidth and quality factor. Mutual inductance and two port parameters. Power, energy and harmonic phenomena in polyphase systems. 3 credit hours.

COURSES

EE 302 Systems Analysis
Prerequisite: EE 301, Continuous and discrete signals, difference equations. The convolution sum and integral. The Z transform. Fourier series and Fourier transform, ideal filter properties. Frequency analysis of signals. 3 credit hours.

EE 341 Digital Computer Techniques
Prerequisites: M 118, EE 202. Numerical analysis techniques with engineering problems. Design and execution of digital computer algorithms. Digital simulation of dynamic systems. 3 credit hours.

EE 344 Electrical Machines
Prerequisite: EE 202. Fields, forces, torques in magnetic systems. Theory characteristics and applications of direct current and alternating current machines, including transformers and synchronous and induction machinery. 3 credit hours.

EE 347-348 Electronics I and II
Prerequisite: EE 202. Principles and applications of electronic devices including diodes, rectifiers, bipolar transistors, FET's and integrated logic gates. Device models, parasitic effects. Single and multistage power and voltage amplifiers, frequency response, design considerations. Operational amplifiers and other analog integrated circuits. 6 credit hours.

EE 349 Electrical Engineering Laboratory II
Prerequisite: EE 347, Laboratory exercises and projects. Amplifying integrating and oscillating circuits. Design of logic elements. Transformers and electromechanical systems. Students are charged for a standard three-credit hour course. Laboratory fee. 2 credit hours.

EE 355-356 Digital Systems I and II
Fundamental concepts of digital systems. Combinational logic design including Boolean algebra, gates, map minimization techniques, and the use of MSI components such as multiplexers, decoders, encoders and comparators. Analysis and design of snychronous and asynchronous sequential systems flip-flops, shift registers, counters. Design of larger digital systems. Topics vary and may include the design of a small digital computer. Use of MSI and LSI components. 6 credit hours.

EE 361 Electromagnetic Theory
Prerequisite: M 203, PH 205. Basic electromagnetic theory including static fields of electric charges and the magnetic fields of steady electric currents. Fundamental field laws. Maxwell's equations, scalar and vector potentials. Laplace's equation and boundary conditions. Magnetization, polarization, field plotting. 3 credit hours.

EE 362 Electromagnetic Waves
Prerequisite: EE 361. Electromagnetic wave propagation and reflection in various structures, including coaxial, two wire and waveguide systems. Various modes of propagation in rectangular waveguides. The dipole antenna. Transmission lines and Smith chart techniques. 3 credit hours.

EE 420 Random Signal Analysis
Prerequisite: EE 301. The elements of probability theory. Continuous and discrete random variables. Characteristic functions and central limit theorem. Stationary random processes and auto correlation. Power density spectrum of a random process. Systems analysis with random signals. 3 credit hours.

EE 437 Industrial Power Systems Engineering
Prerequisite: EE 301. Study of the components forming a power system, its economic operation; symmetrical components and sequence impedance in the study of faults and load-flow studies. 3 credit hours.

EE 438 Electric Power Transmission
Prerequisite: EE 437. The fundamentals of electric generation, transmission and distribution. Transmission line analysis and performance, circle diagrams. Load-flow studies. Power system stability. 3 credit hours.

EE 445 Communications Systems
Prerequisites: EE 301, EE 420. The analysis and design of communication systems. Signal analysis, transmission of signals, power density spectra, amplitude, frequency and pulse modulation. Performance of communications systems and signal to noise ratio. 3 credit hours.

EE 446 Pulse and Digital Circuits
Prerequisites: EE 301, EE 347. A study of circuits used for digital computer and pulse applications. Linear and non-linear wave shaping, digital logic circuits (DTL, TTL, MOS, I^2L), analog switches, A/D and D/A conversion techniques, timing circuits. Special topics of current interest. 3 credit hours.

EE 450 Analysis and Design of Active Networks
Prerequisites: EE 301, EE 347. Techniques in the analysis and design of active and passive networks. Synthesis of passive networks, the operational amplifier, second-order active networks. Analog, Butterworth and Chebyshev filters. Digital signal processing and additional selected topics. 3 credit hours.

EE 453 Electrical Engineering Laboratory III
Prerequisite: senior standing in electrical engineering. Laboratory exercises and projects. Design of digital systems of varying complexity. Use of diagnostic equipment and troubleshooting techniques. Note: Students are charged for a standard three-credit hour course. 2 credit hours.

EE 455 Control Systems
Prerequisite: EE 302. Analysis of systems employing feedback. Performance criteria including stability. Design of compensation networks. Techniques of root locus, Routh-Hurwitz, Bode and Nyquist. Introduction to modern control theory including the concept of state. 3 credit hours.

EE 463 Electromechanical Energy Conversion
Prerequisites: EE 361, M 204. Introduction to electromechanical devices, lumped parameter electromechanics; introduction to rotating machinery, equilibrium and stability, fields in moving matter; energy conversion dynamics. 3 credit hours.

EE 475 Microprocessor Systems
Prerequisites: EE 355, EE 271. A study of the tehniques and methods of designing digital systems using microcomputer systems. Topics include microcomputer assembly language programming techniques, input/output programming, memories, interfacing and analog-digital and digital-analog conversion. The course is structured around laboratory exercises. 3 credit hours.

EE 500 Special Topics in Electrical Engineering
Prerequisite: instructor's consent (may be repeated for credit). Open to seniors in electrical engineering. Special topics in the field of electrical engineering. Supervised independent study. Arranged to suit the interest and requirements of the student. 3 credit hours.

EE 504 Laboratory Thesis
Prerequisite: instructor's consent. Open to seniors in electrical engineering. Students must submit approved proposal. Advanced laboratory problems. Students work on problems of their selection with the approval of the instructor. 3 credit hours.

EE 599 Independent Study
Prerequisite: Consent of faculty supervisor and approval of department chairman. Independent study provides the opportunity to explore an area of special interest under faculty supervision. May be repeated. 3 credit hours.

Engineering Science

ES 103 Technology in Modern Society
Scientific and technological developments and their implications for the future of society. Prospects and problems in communications, energy sources, automation, transportation and other technologies. Use and control of technological resources for public benefit. 3 credit hours.

ES 107 Introduction to Engineering
Prerequisite: M 115 (may be taken concurrently). Overview of the problems, perspectives and methods of the engineering profession. Modeling of real world problems for purposes of optimization, decision making and design. Practical techniques of problem formulation and analysis. 3 credit hours.

Finance

FI 113 Business Finance
Prerequisites: A 112, EC 134, QA 118. An introduction to the principles of financial management and the impact of the financial markets and institutions on that managerial function. An analytical emphasis will be placed upon the tools and techniques of the investment, financing and dividend decision. In addition, the institutional aspects of financial markets, including a description of financial instruments, will be developed. 3 credit hours.

FI 214 Principles of Real Estate
Prerequisite: FI 113. An introduction to the fundamentals of real estate practice and the essentials of the various aspects of the real estate business. Emphasis will be placed on brokerage, mortgage financing, investments, management and valuation relative to commercial and industrial real estate. 3 credit hours.

FI 227 Risk and Insurance
Prerequisite: FI 113. An examination and evaluation of risk in business affairs and the appropriate methods for handling them from the viewpoint of the business firm. Emphasis will be placed on, and extended consideration devoted to, the various forms of insurance coverage. 3 credit hours.

FI 229 Corporate Financial Management
Prerequisites: FI 113, QA 216. A comprehensive analysis of the structure of optimal decisions relative to the functional areas of corporate financial decision making. Emphasis is placed upon developing an understanding of the applications and limitations of decision models for the investment, financing and dividend decisions of the corporation. Topics include: firm valuation, capital budgeting, risk analysis, cost of capital, capital structure and working capital management. 3 credit hours.

FI 230 Investment Analysis and Management
Prerequisites: FI 113, QA 216. An analysis of the determinants of valuation for common stocks, preferred stocks, bonds, convertible bonds and preferred stock, stock warrant and puts and calls. Emphasis will be placed on the analytical techniques of security analysis, portfolio analysis and portfolio selection. 3 credit hours.

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FI 325 International Finance
Prerequisite: FI 113. An introduction to the theory and determination of foreign exchange rates, mechanisms of adjustment to balance of payments disturbance, fixed vs. flexible exchange rates. The international reserve supply mechanism and proposals for reform of the international monetary system. 3 credit hours.

FI 341 Financial Decision Making
Prerequisites: FI 229, FI 230, QA 333. An examination of the conceptual foundations underlying portfolio theory, capital market theory and firm financial decision making. Emphasis will be placed on an integrated analysis of firm financial decision making under varying conditions of certainty and capital market perfections. 3 credit hours.

FI 345 Financial Institutions and Markets
Prerequisites: FI 113, QA 216. An examination of the relationship between the financial system and the level, growth and stability of economic activity. Emphasis will be placed upon the theory, structure and regulation of financial markets and institutions, coupled with the role of capital market yields as the mechanism that allocates savings to economic investment. 3 credit hours.

French

FR 101-102 Elementary French
Stresses pronunciation, aural and reading comprehension, basic conversation and the fundamental principles of grammar. 6 credit hours.

FR 201-202 Intermediate French
Prerequisites: FR 101-102 or equivalent. Stresses the reading comprehension of modern prose texts and a review of grammar necessary for this reading. Students are encouraged to do some reading in their own areas of interest. 6 credit hours.

FR 301-302 Main Currents of French Literature
Prerequisites: FR 201-202 or equivalent. Reading of significant writers of French literature from the Middle Ages to the twentieth century. 6 credit hours.

Fire Science

FS 105 Municipal Fire Administration
This course delineates the fire safety problem, explores accepted administrative methods for getting work done, covers financial considerations, personnel management, fire insurance rates, water supply buildings and equipment, distribution of forces, communications, legal considerations, fire prevention, fire investigation, and records and reports. Course content is designed for individuals involved in either public or private fire protection systems as well as safety or insurance professionals. 3 credit hours.

FS 106 Fire Strategy and Tactics
A study of the responsibilities and operating modes of officers commanding fire department units, including engine, ladder and rescue companies. Initial evaluation of the problems confronting first arriving units. Outline of particular problems encountered in various types of occupancies and buildings. Stress on safety of the operating forces as well as of the public. Standpipe and sprinkler system utilization. Overhauling operations. 3 credit hours.

FS 201 Essentials of Fire Chemistry with Laboratory
The examination of the chemical requirements for combustion, the chemistry of fuels and explosive mixtures and the study of the various methods of stopping combustion. Analysis of the properties of materials affecting fire behavior. Detailed examination of the basic properties of fire. Laboratory Fee. 4 credit hours.

FS 202 Principles of Fire Science Technology
This course is an introduction to the science of public fire protection with a review of the role, history, and philsophy of the fire service in the United States. It includes career orientation and a discussion of current and future problems in public fire protection. 3 credit hours.

FS 207 Fundamentals of Fire Prevention
Fundamentals of Fire Prevention considers fire loss, investigation standards, laws, engineering, chemistry and physics as related to those persons entering into or already employed in the various branches of the fire service. It will also consider the fire and safety problems involved in storage and handling of specific hazardous materials. 3 credit hours.

FS 301 Building Construction, Codes and Standards
The various types of construction materials and their properties with emphasis on the effect of heat, water, and internal pressures generated under fire conditions. Familiarization with national, state, and local ordinances and codes which influence the fire protection field. 3 credit hours.

FS 303 Fire Protection Fluids and Systems
Chemical properties of fluids used in fire suppression systems and operations. Design of water supply and distribution for fire protection. Laboratory study of operational and hydraulics problems. 3 credit hours.

FS 304 Fire Detection and Control
Heat, sensitivity, thermostats, fusible elements, fire detection systems, designs and layouts, alarm systems, power sources, safeguards, municipal alarm systems, construction, installation and maintenance requirements, standards and codes. Automatic extinguishing systems, design and layout of water, gas and power systems. 3 credit hours.

FS 306 Fire and Casualty Insurance
This course will examine the institution of fire insurance in the United States since it is the primary means of minimizing the economic consequences of property fire damage. 3 credit hours.

FS 402 Arson Investigation
An analysis of incendiary fire investigations from the viewpoint of the field investigator with an emphasis on the value of various aids and techniques in the detection of arson, collection and preservation of evidence, investigation, interrogation, related laws of arson, court appearances, and testimony. There will be a discussion of case study illustrations. 3 credit hours.

FS 403 Process and Transportation Hazards
Special hazards of industrial processing, manufacturing and the transportation of products and personnel. Analytical approach to hazard evaluation and control. Reduction of fire hazards in manufacturing processes. 3 credit hours.

FS 404 Special Hazards Control
Types of industrial processes requiring special fire protection treatment such as heating equipment, flammable liquids, gases and dusts. Emphasis on fundamental theories involved, inspection methods, determination of relative hazard, application of codes and standards and economics of installed protection systems. 3 credit hours.

FS 405 Fireground Management
A study of the effective management of suppression forces at various fire situations. Includes consideration of pre-fire planning, problem identification and solution implementation. Case studies of actual and theoretical fire incidents, command control concepts, maximum utilization of forces available, priorities of action and logistics at large-scale operations will be covered. 3 credit hours.

FS 406 Arson Investigation II
Prerequisite: FS 402. An advanced course showing the principles and methods of investigation involving the techniques needed for the investigation of gas fires, automobile and boat fires, electrical fires, explosions and bomb scene investigation. 3 credit hours.

FS 407 Arson Investigation II Laboratory
This course consists of experiments dealing with FS 406. Laboratory fee. 1 credit hour.

FS 498-499 Research Project
One lecture per week in FS 498; credit—1 credit hour. One lecture and one laboratory session per week in FS 499; credit—2 credit hours. Development of a student project and a written report in a specified area in fire administration or fire science technology with faculty supervision. Grade awarded upon completion of project. This is a two-semester course with FS 498 as prerequisite for FS 499. 3 credit hours over two-semester period.

FS 500 Selected Topics
Selected topics in fire science on a variety of current problems and specialized areas not available in the regular curriculum. 3 credit hours.

FS 599 Independent Study
Prerequisites: consent of faculty member and chairman of department. Opportunity for the student under the direction of a faculty member to explore an area of interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

German

GR 101-102 Elementary German
Stresses pronunciation, aural and reading comprehension, basic conversation and the fundamental principles of grammar. 6 credit hours.

GR 201-202 Intermediate German
Prerequisites: GR 101-102 or the equivalent. Stresses the reading comprehension of modern prose texts and a review of grammar necessary for this reading. Texts used in the course are selected from many areas of study, including physics, biology and chemistry. Students are encouraged to read in their own areas of interest. 6 credit hours.

Hospitality (Hotel/Restaurant), Dietetics and Tourism Administration

HM 100 Introduction to the Hotel/Restaurant Business
An introduction to hotel and restaurant operation. History of the industry with special emphasis on current trends, analysis of various operations within the industry. 3 credit hours.

HM 165 Principles of Tourism and Travel
An introduction to aspects of tourism related to the hotel-motel industry. Foreign and domestic tourism, business travel. 3 credit hours.

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HM 166 Touristic Geography
Prerequisite: HM 165. An examination of the touristic areas of every major travel destination. Travel destinations; current developments world wide, attracting individuals, pleasure groups or business conventions. 3 credit hours.

HM 200 Volume Food Production and Service I
Prerequisite: SC 116, concurrent with HM 202. This course examines present-day concerns about volume foods and the many meanings of food in the lives of people. It covers the scientific principles of volume food preparation; physical and chemical changes involved. Techniques used to select certain foods in large volumes. Laboratory experiences are provided for demonstrations. Laboratory Fee. 3 credit hours.

HM 202 Volume Food Purchasing
Introduction to the purchasing, receiving, and issuing of foods and food items. The identification of guides, preparation of specifications, and cost control procedures are stressed. Field trips are required. 3 credit hours.

HM 204 Volume Food Production and Service II
Prerequisite: HM 200. This course examines menu planning and quantity recipe standardization integrated with techniques, methods, principles and standards of volume food production and service. Supporting areas such as volume receiving, storage, sanitation, safety and equipment, and the phases of organization involved in the preparation and service of volume foods for large groups. Students assume responsibility for planning, purchasing, preparing and obtaining the food and labor cost for each preparation. Laboratory experiences are provided for quantity food production. Laboratory Fee. 3 credit hours.

HM 210 Hotel Front Office Systems
Prerequisite: consent of the instructor. An introduction to the work flow connected with front office procedures. Preparation of the night audit, an introduction to the art of innkeeping. 3 credit hours.

HM 212 Laws of Innkeeping
Prerequisite: HM 100 or consent of the instructor. The historical development of the common inn. Innkeeper/guest relationships, responsibilities of the innkeeper, use of the innkeeper's lien. 3 credit hours.

HM 214 Food Service Management Systems I
The scope, organization and operation of food service departments and programs within public and private institutions. Topics to be covered will include basic principles of management and organization, work authority and delegation, work policies, staffing, safety, job responsibilities and the operational characteristics of food service systems. 3 credit hours.

HM 215 Supervised Field Experience for Management Systems I
Corequisite: HM 214. Experiences in the techniques and responsibilities of management in a food service department of selected affiliated health care organizations, schools, colleges, industry or community nutrition programs. The field work will be accompanied by lectures, readings, reports, and faculty conferences. This course should be taken concurrently with HM 214. 1 credit hour.

HM 216 Food Service Management Systems II
Basic principles of volume food purchasing and storage and the principles of food sanitation and work safety. Emphasis will be placed on management responsibilities for producing high quality food and maintaining high sanitation and safety standards. 3 credit hours.

HM 217 Supervised Field Experience for Management Systems II
Corequisite: HM 216. Experiences in the techniques and responsibilities of management in a food service department of selected affiliated health care organizations, schools, colleges, industries or community nutrition programs. The field work will be accompanied by lectures, readings, reports and faculty conferences. This course should be taken concurrently with HM 216. 3 credit hours.

HM 218 Food Service Management Systems II
Emphasis on an understanding and sensitivity to human behavior and the management and control of resources for food service operations. Topics include the principles of labor management, food and labor cost controls, and food and labor budget preparation methodologies. 3 credit hours.

HM 219 Supervised Field Experience for Management Systems III
Corequisite: HM 218. Experience in the techniques and responsibilities of management in a food service department of selected affiliated health care organizations, schools, colleges, industries or community nutrition programs. The field work will be accompanied by lectures, readings, reports and faculty conferences. This course should be taken concurrently with HM 218. 3 credit hours.

HM 220 Food Service Management Systems IV
The importance of interpersonal skills and human relations, and the principles and practices of personnel management and labor relations. The basic principles of work management, employee selection, placement, and training will also be included. 3 credit hours.

HM 221 Supervised Field Experience for Management Systems IV

Corequisite: HM 220. Experiences in the techniques and responsibilities of management in a food service department of selected affiliated health care organizations, schools, colleges, industries or community nutrition programs. The field work will be accompanied by lectures, readings, reports and faculty conferences. This course should be taken concurrently with HM 220. 3 credit hours.

HM 222 Dietetic Seminar

Special topics relating to food service management in institutions and community nutrition care programs. After selecting a topic on contemporary problems, the student will review the literature, prepare a bibliography, and make an oral presentation before the seminar. 1 credit hour.

HM 267 Shipping and Cruises

An analysis of shipping from its earliest developments, including its effects on interregional and international communications. The passenger liner and its emergence as a total vacation entity, the cruise industry and its interrelationship with airlines, hotel and tour operators. 3 credit hours.

HM 268 Land Transportation and Reservation Procedures

Prerequisite: HM 165 or HM 166. An examination of the effects of rail, coach, and automotive transportation, throughout the world, including migration, trade, travel trends, and the development of hotels and resorts. Procedures for designing land transportation travel packages and making reservations will be covered. 3 credit hours.

HM 300 Special Topics

The hotel, food service, and tourism fields are changing constantly because of new technology and ideas for their expansion and management. The purpose of these courses is to select special topics that are not covered in existing courses and expose students to recent developments and future research in the following specific courses. 3 credit hours.

HM 300 Bar Management
HM 300 Wine Appreciation
HM 300 Casino Management
HM 300 Energy Management in the Hospitality Industry
HM 300 Meat Selection and Grading
HM 300 Special Diets
HM 300 Ski Resort Management
HM 300 Club Management
HM 300 Summer Resort Management
HM 300 Historical Inns of Connecticut/New England
HM 300 Convention Bureau Management
HM 300 Computer Systems in the Hotel and Restaurant Industry
HM 300 Food Service and Lodging Study Tours
HM 300 Garde Mangé
HM 300 Pastry and Dessert Preparation
HM 300 Baking
HM 300 Sanitation and Safety in the Hospitality Industry

HM 304 Cultural Understanding of Foods and Cuisines

Prerequisites: SC 116, HM 200. This course examines foods including the culinary highlights and the historical and social implications of the foods of selected countries and regions. In addition to the preparation of many foods, which will be based on the components of menus and nutritive values, this course will trace the development of traditional cookery, eating customs, special serving techniques, and the mastery of unusual food production techniques and equipment. Various restaurants featuring international and ethnic customs in the New Haven area will be visited. Laboratory Fee. 3 credit hours.

HM 321 Hotel, Restaurant and Institutional Food Service Accounting and Auditing Procedures

Prerequisite: A 111. Accounting and auditing procedures for hotels, restaurants, and institutions. Managerial accounting practices for the hospitality industry will be stressed. 3 credit hours.

HM 322 Marketing and Sales Promotion for the Hospitality Industry

Prerequisite: HM 100. An analysis of aspects of the services market with emphasis on consumer behavior. Internal and external stimulation of sales in competitive and noncompetitive markets; vagaries of environmental concept; experimental techniques in industry-sponsored, salesblitz activities. 3 credit hours.

HM 325 Food and Labor Cost Controls

Prerequisites: HM 100, A 111. Current methods and principles of food and beverage control and labor cost controls for hotels, restaurants, and institutions. Emphasis will be placed on food and beverage cost control techniques. 3 credit hours.

HM 326 Personnel Management for Hotels, Restaurants, and Institutions

Techniques and philosophies of personnel management applied to hotels, restaurants, and institutions. 3 credit hours.

HM 330 Institutional Environmental Services and Housekeeping

Prerequisites: SC 116. This course examines environmental and housekeeping services in public and private institutions. Emphasis is placed on the management of these services in educational and health care institutions and on the selection of materials, chemicals, equipment, and labor to provide these services in a cost-quality manner. 3 credit hours.

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HM 370 Airline Transportation and Reservation Procedures
Prerequisite: HM 165 or HM 166. A study of the present and future role and impact ot the airline industry in the tourism and travel industry. Relationships with the hotels, steamship lines, railways, coach companies, and tour wholesalers and operators will be covered. 3 credit hours.

HM 375 Travel Agency Administration
Prerequisites: HM 267, HM 268, or consent of the instructor. A study of the travel business, defining the roles of the retail travel agent and the wholesale tour operator, and examining their relationships within the industry and with the traveling public. 3 credit hours.

HM 410 Hotel, Restaurant and Institutional Food Service Administration Systems and Operations
Design, analysis, and evaluation of hotel, restaurant and institutional food service administration systems and operations. Emphasis is placed on analytical techniques, model building, and computer-assisted operations. 3 credit hours.

HM 411 Food Service Equipment and Layout
A study of building management stressing the interedependence of planning, construction, equipment, maintenance, personnel and service to the on-premise customer. Layout studies, equipment design, budget estimation. 3 credit hours.

HM 480 Wholesale Tour Systems
Prerequisites: HM 100, HM 165, HM 166, HM 267, HM 268, HM 370, HM 375. An in-depth examination of the tour industry. Included in the course will be a detailed study of package tours, tour costing, tour marketing, tour operation associations, the USA tourist market, wholesaling, escorting, and airline deregulation, as it affects the travel and tourism industry. 3 credit hours.

HM 510 Field Work in Hotel, Restaurant and Institutional Food Service Administration
Permission of department chairman required. Students will be assigned to work on projects and/or assigned to specific training programs with professions in their major areas of study in participating hotels/restaurants and institutions. 3 credit hours.

HM 512 Seminar in Hotel, Restaurant and Institutional Food Service Administration
Current topics and developments in the food service and hospitality industries. 3 credit hours.

HM 599 Independent Study
Prerequisite: consent of the department chairman. Independent research projects or other approved phases of independent study. 3 credit hours.

History

HS 101 Western Civilization to 1700
Europe from its ancient beginnings to the eighteenth century. Its social, economic, political and cultural history. 3 credit hours.

HS 102 Western Civilization since 1700
Europe and its global impact from the eighteenth century to the present. Political, cultural and institutional development. 3 credit hours.

HS 105 Economic History of the Western World to 1914
A survey of the economic history of the Western World from preindustrial Europe to World War I; historical, political, cultural and international developments. 3 credit hours.

HS 106 Economic History of the Western World since 1914
Prerequisite: HS 105 or permission of instructor. United States and European economic development within a historical perspective from 1914 to the present. The international background and the Western response. 3 credit hours.

HS 108 History of Science
The development of science and technology from antiquity to the present. Their impact on society and the world. 3 credit hours.

HS 120 History of Blacks in the United States
The history and background of Black people in the United States. Social, political and cultural development. 3 credit hours.

HS 211 United States to 1865
Survey of American social, economic, political and diplomatic developments from Colonial times to 1865. 3 credit hours.

HS 212 United States since 1865
Survey of American history from 1865 to the present. Institutional and industrial expansion, periods of reform and adjustment. The U.S. as a world power. 3 credit hours.

HS 223 United States Diplomatic History
The ideas, trends and interpretations of U.S. diplomacy from the American Revolution to the present. 3 credit hours.

HS 247 Comparative European Political Systems
Historical, comparative approach to the political and social institutions of the United Kingdom, U.S.S.R., Germany and France. 3 credit hours.

HS 260 Modern Asia
The ideological, cultural and traditional political, economic and diplomatic history of East, South and Southeast Asia from the sixteenth century to the present. 3 credit hours.

HS 311 Colonial and Revolutionary America to 1789
The cultural and political background of British North America, Colonial and Revolutionary America. The creation of a republican society. 3 credit hours.

HS 312 United States in the Twentieth Century
The interaction of political, economic, social, intellectual and diplomatic events and their impact upon twentieth century America. 3 credit hours.

HS 322 United States Social and Intellectual History
The ideological, cultural and social development of the American people. The impact of ideas on American life. 3 credit hours.

HS 341 Ancient Greece and Rome
The rise and decline of ancient Greece and Rome. Institutions and ideas that have shaped Western civilization. 3 credit hours.

HS 343 Renaissance and Reformation Europe
Europe from 1300 to 1650; from feudal state to nation state; religious unity to diversity. 3 credit hours.

HS 344 Europe in the Seventeenth and Eighteenth Centuries
The cultural, political and economic life of Europe from classicism to the Napoleonic period; the Enlightenment. 3 credit hours.

HS 345 Europe in the Nineteenth Century
European history from the Napoleonic period to World War I. Its internal development and world impact. 3 credit hours.

HS 349 Modern European Intellectual History
The intellectual, scientific and social thought from the Enlightenment to the present. The influence of ideologies on modern thinking. 3 credit hours.

HS 351 Russia and the Soviet Union
The development of czarist Russia from 1200 to the Revolution of 1917; the U.S.S.R. from 1917 to the present. 3 credit hours.

HS 353 Modern England
The development of British history from the medieval period to the present; England's role in international affairs. 3 credit hours

HS 355 Modern Germany
German civilization from the seventeenth century to the present. Its impact on Europe and the world. 3 credit hours.

HS 381-389 Selected Studies in History
Special topics in history dealing with the modern world. A study in depth of vital historical issues. 3 credit hours.

HS 431 Colonial and Nineteenth Century Latin America
The European and Indian origins of Latin America, the independence movement and the post-independence period to 1890. 3 credit hours.

HS 432 Latin America in the Twentieth Century
Latin America since 1890, Inter-American relations and current revolutionary movements. 3 credit hours.

HS 446 Europe in the Twentieth Century
Recent and contemporary European history beginning with World War I. Institutional development and its changing role in world politics. 3 credit hours.

HS 447 Economic History of Europe since 1945
Prerequisites: EC 133, EC 134. Europe in world trade and payments, the European economic community, business management and the welfare state. 3 credit hours.

HS 451 Economic History of the Soviet Union
Prerequisites: EC 133, EC 134. The pre-1917 background. Problems of planning: organizational framework, the implementation of Marxism as an economic system. 3 credit hours.

HS 460 Economic History of Modern Asia
Prerequisites: EC 133, EC 134. The historical development of the Asian economy in the nineteenth and twentieth centuries, emphasizing the post-war period. 3 credit hours.

HS 461 Modern China
The ideological, cultural and historical background of China. The imperial order, Kuomintang and the Communist revolution to the present. 3 credit hours.

HS 466 Modern Japan
The institutional and cultural traditions of Japan. The feudal period and subsequent modernization, postwar political, economic and cultural transformations. 3 credit hours.

HS 465 History of the Middle East
The rise, spread and development of Islam to the present modern nationalisms: Turkish, Iranian, Arab and Zionist. 3 credit hours.

HS 470 Modern Africa
The political and cultural history of North Africa. The colonial domination of Sub-Sahara Africa and the emergence of the independent states after 1945. 3 credit hours.

HS 490 Historiography
A survey of European and American historical thought, historical methods and contemporary historical writing. 3 credit hours.

HS 491 Senior Seminar
The undertaking of an independent study and research project. Recommended for all history majors in their senior year. 3 credit hours.

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HS 599 Independent Study
Prerequisite: consent of faculty member and chairman of department. Opportunity for the student, under the direction of a faculty member, to explore an area of interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

International Business

IB 312 International Business
Analysis of business environments with special emphasis on similarities and differences among the nations of the world, and views toward developing intercultural managerial effectiveness. 3 credit hours.

IB 321 Operation of the Multinational Corporation
Prerequisite IB 312. Specific problems encountered by multinational firms. Topics include investment decisions, planning and control and the social responsibilities of firms in host nations. 3 credit hours.

IB 549 International Business Policy
Prerequisites: MK 413, junior standing. Identification and relation of the elements involved in the dynamics of a company and its international environment through case analysis. This is a capstone course in international business. 3 credit hours.

IB 599 Independent Study
Prerequisites: IB 312, junior standing. A planned program of individual study under the supervision of a member of the faculty. 3 credit hours.

Industrial Engineering and Computer Science

IE 102 Introduction to Computers: FORTRAN
Prerequisite: M 109 or equivalent. An introductory course in computers and FORTRAN for engineering and science students. The student is taught the basics of the FORTRAN language. The roles of problem analysis, program design, data structures and programming techniques are presented. Several problems are programmed and debugged by the student and run on the campus computer facility. Laboratory Fee. 3 credit hours.

IE 104 Computer Capacity Planning
Introduction to methods of evaluating corporate computer facility needs as a result of defined job type and job mix. Techniques are examined for effective determination of vendor offerings in terms of hardware and software capabilities to accommodate corporate needs. 3 credit hours.

IE 105 Introduction to Computers: COBOL
Prerequisite: M 109 or equivalent. An introductory course in the application of the computer to the needs of today's society for business, social science and art students. Student use of data processing facilities of campus computer center, problem solving, logic theory and the understanding of software packages are put into practice. Students learn how to develop flow charts and write and debug programs in COBOL. Laboratory Fee. 3 credit hours.

IE 107 Introduction to Data Processing
Introduction to the concepts, capabilities and limitations of electronic data processing. Use of network systems, software packages and computer services. Project oriented; no programming required. (Not to be taken for credit by computer technology majors.) 3 credit hours.

IE 204 Engineering Economics
Prerequisite: M 116 or M 117. A quantitative analysis of applied economics in engineering practice; the economy study for comparing alternatives; interest formulae; quantitative methods of comparing alternatives; intangible considerations; selection and replacement economy for machines and structures; break-even and minimum cost points; depreciation; relationship of accounting to the economy study; review of current industrial practices. Promotes logical decisions through the consideration of alternative courses of action. 3 credit hours.

IE 214 Management Theory
Provides insight into the elements of the managerial process and develops a rational synthesis of the mass of detail comprising the subject matter of management. Focusing largely upon the complex problems of top-and middle-level management, this course investigates what managers do under given circumstances, yet stresses the ongoing activities of management as part of an integrated, continuous process. 3 credit hours.

IE 223 Personnel Administration
Prerequisite: IE 214 or MG 125. Provides a foundation in fundamental concepts and a general knowledge of techniques in the administration of personnel relations. The nature of personnel administration, the handling of personnel problems, employee attitudes and morale. Techniques of personnel administration; recruitment, interviews, placement, training, employee rating, as well as wage policies and administration. In order to secure breadth and depth in the approach to personnel problems, simple case studies are used at appropriate points throughout the course. 3 credit hours.

IE 224 Advanced FORTRAN Programming
Prerequisites: IE 102 and M 115. Introduces the student to advanced FORTRAN programming and encourages student use of the campus computer facility, including its interactive terminals. Various typical engineering and scientific computer applications are discussed and demonstrated. Problem solving innovations are presented. Laboratory Fee. 3 credit hours.

IE 225 Advanced COBOL Programming
Prerequisite: IE 105. Introduces the student to advanced techniques in programming and debugging programs written in COBOL for the campus computer. Various typical systems, analyses and applications are discussed and demonstrated. Laboratory Fee. 3 credit hours.

IE 231 Interactive Programming in the BASIC Language
Prerequisite: IE 102 or IE 105. Introduction to the principles and use of interactive computing systems. The BASIC language will be taught and used, with special emphasis on interactive programming methods, including control, protection and integrity of programs and files accessible by several users. Laboratory Fee. 3 credit hours.

IE 233 Cost Control
Prerequisite: M 115. Basic analysis of cost control techniques. Designed to give members of the management team the underlying rudiments of cost control systems they will be using and by which they will be measured and controlled. Theory of standard costs, flexible budgeting and overhead handling techniques emphasized by analytical problem solution. 3 credit hours.

IE 234 Production Control
Prerequisites: IE 214 or MG 125, M 115. The basic principles that govern production control in a industrial plant. These principles are worked out in the problems of procuring and controlling materials, in planning, routing, scheduling and dispatching. Familiarizes the student with present and new methods used in this field including O.R. techniques. 3 credit hours.

IE 243 Work Analysis
Prerequisite: M 115. An introductory course in motion analysis, methods analysis and work measurement. Motion and methods analysis techniques including the principles of motion economy, process analysis charting, operations analysis, activity analysis and work design layout analysis. Students are required to design a work place project which will be filmed on closed-circuit television for analysis. Work measurement includes an introduction to time study fundamentals and predetermined time systems. Laboratory Fee. 3 credit hours.

IE 320 Operating Systems
Prerequisites: IE 102 or IE 105, IE 336. Introduction to operating systems, job control language and general structure of operating systems. Priority control structure and input/output routines with interrupt level and cycle-stealing philosophy also included. 3 credit hours.

IE 325 APL/BASIC/RPG
Prerequisite: IE 231. Exposure to the use of languages developed specifically for terminal use in an attempt to acquaint the student with instantaneous programming and problem solving via a centralized computer facility. Laboratory Fee. 3 credit hours.

IE 332 PL/1
Prerequisite: IE 224 or IE 225. Development of the use of PL/1, a combination business-oriented and scientific/engineering-oriented, high-level computer language. Laboratory Fee. 3 credit hours.

IE 334 Assembler Language
Prerequisite: IE 224 or IE 225. Description of the functional characteristics of a computer main storage and peripheral unit structure along with the monitoring system control function via the use of the Assembler language. Laboratory Fee. 3 credit hours.

IE 335 Simulations and Applications
Prerequisite: IE 224. Evaluation of mathematical modeling of a system (business or scientific/engineering oriented) geared toward program simulation. Canned simulation programs (e.g., Business Games, GASP, GPSS) will be evaluated and run. Laboratory Fee. 3 credit hours.

IE 336 Hardware Operation
Prerequisite: IE 224 or IE 225. Hands-on computer operation of programs written by the student. Use of all I/O devices will be included along with description of disk monitoring system control. Laboratory Fee. 3 credit hours.

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IE 344 Advanced Work Analysis
Prerequisite: IE 243. A course extending the principles introduced in the prerequisite course including the development of standard data systems, formula construction in standard data, methods-time-measurement and master standard data predetermined time system, work sampling, standards on indirect work, wage payment plans and the use of closed-circuit television as a methods training tool. Laboratory fee. 3 credit hours.

IE 346 Statistical Analysis
Prerequisite: M 118. Provides an introduction to the application of statistical techniques to industrial and engineering problems, probability and distribution theory, measures of central tendency and dispersion in relation to population and samples, as well as applications of algebraic methods in industrial practice, including advanced statistical methods. Special sections are offered for students in the social sciences, without the calculus prerequisite. (Not considered acceptable for meeting A.B.E.T. mathematics requirements in the electrical and mechanical engineering programs.) 3 credit hours.

IE 347 Probability Analysis
Prerequisite: QA 216 or IE 346. Develops the theory of probability and related applications. Introduces such relevant areas as: combinations and permutations, probability space, law of large numbers, random variables, conditional probability, Bayes' Theory, Markov chains and stochastic processes. (Not considered acceptable for meeting A.B.E.T. mathematics requirements in the electrical and mechanical engineering programs.) 3 credit hours.

IE 348 Manufacturing Processes
Mill and manufacturing processes. The casting of metals, pattern making and mold preparing. Fabricating, metal cutting and welding. Demonstrations, laboratory and inspection trips to local manufacturing plants. 3 credit hours.

IE 436 Quality Control
Prerequisite: IE 346. Economics of quality control; modern methods used by industry to achieve quality of product; preventing defects; organizing for quality; locating chronic sources of trouble; coordinating specifications, manufacturing and inspection; measuring process capability; using inspection data to regulate manufacturing processes; control charts; selection of modern sampling plans. 3 credit hours.

IE 443 Facilities Planning
Prerequisites: IE 243, IE 204. Factors in plant location, design and layout of equipment. The basic principles of obtaining information essential for carrying out such investigations. Survey of such practices as material handling, storage and storeroom maintenance and use of service departments in modern factories. Laboratory Fee. 3 credit hours.

IE 502 Operations Research
Prerequisite: QA 216 or IE 346. The operations research area is oriented to various mathematical and near-mathematical methods for getting answers to certain kinds of business problems. Simulation including Monte Carlo, queuing, the Flood method for assigning jobs, the transportation method and linear programming including the simplex method with both algebraic solutions and tableaus. 3 credit hours.

IE 504 Senior Laboratory Project
Prerequisite: senior status. Advanced laboratory testing and special problems. The student works on problems of his own selection which have been outlined by him and have received approval. They may be in the form of a semester thesis or a series of original experiments. 3 or 4 credit hours.

IE 507 Systems Analysis (General)
Prerequisite: junior status. Presents the analytical and conceptual techniques upon which systems analysis and development is based, and applications to nonbusiness as well as business operations. Development of case studies and their applications independently oriented to the student's major area of interest. 3 credit hours.

IE 508 Systems Analysis (Business and Engineering)
Prerequisites: IE 214 or MG 125, M 115. Presents the analytical and conceptual techniques upon which systems analysis and development is based, and applications to business and industrial fields. Development of case studies and their application independently oriented to the student's major area of interest. 3 credit hours.

IE 510 Business Games
Prerequisites: IE 214 or MG 125; QA 216 or IE 346. The business games area gives the student the opportunity to correlate his entire course of study in a management simulation framework. These training games make use of simulation models that explore specific management areas in depth. Operations research techniques of scientific management are developed. 3 credit hours.

IE 599 Independent Study
Prerequisite: consent of the instructor and chairman of the department. Opportunity for the student to explore an area of interest under the direction of a faculty member. Course must be initiated by the student, and have the approval of the advisor and chairman. 1-3 credit hours.

Journalism

J 101 Journalism I
A survey of journalism designed to aquaint students with the profession. The American newspaper as a social institution and a medium of communication. 3 credit hours.

J 102 Journalism II
Prerequisite: J 101. The basic principles of journalism and the organizational patterns of the mass media. Some practice in reporting and the writing of news and feature stories. 3 credit hours.

J 201 News Writing and Reporting
Prerequisites: J 101, J 102. The elements of news, the style and the structure of news stories, news-gathering methods, copy-reading and editing, reporting. 3 credit hours.

J 202 Advanced News Writing and Reporting
Prerequisite: J 201. Intensive practice in news writing and reporting. 3 credit hours.

J 311 The Copy Desk
Intensive practice in copyreading, editing and revising, headline writing, photograph selection, page make-up, and reporting. Regular critiques of the copy-desk work of major newspapers. 3 credit hours.

J 351 Journalistic Performance
Students follow the coverage in the media given to selected topics, and prepare to make judgments of the coverage by doing research and becoming knowledgeable about the particular topic chosen. The course stresses analytical reading and responsible, informed criticism. 3 credit hours.

J 367 Interpretive and Editorial Writing
Practice in the writing of considered and knowledgeable commentaries on current affairs and in writing of interpretive articles based on investigation, research and interviews. 3 credit hours.

J 599 Independent Study
Prerequisite: consent of the instructor and journalism coordinator. Opportunity for a student, under the direction of a faculty member, to explore an area of interest. 3 credit hours.

Business Law

LA 101 Business Law I
Introductory overview of the development of common, statutory and constitutional law and the underlying social and economic policies thereof. The nature, functions and limitations of law and the legal system in the resolution of a controversy as it relates to business activity with particular attention to contract law. 3 credit hours.

LA 102 Business Law II
Prerequisite: LA 101. Agencies, partnerships, corporations, employer/employee relationships, securities and anti-trust law. 3 credit hours.

LA 103 Business Law III
Prerequisite: LA 102. An advanced study of business law, structured especially for the needs of financial accounting majors. Course coverage will include bailments, property rights, the law of sales, and the law of negotiable instruments. Particular attention will be devoted to applicable provisions of the Uniform Commercial Code. A brief survey of the federal bankruptcy laws is also included. 3 credit hours.

Mathematics

All prerequisites for the following mathematics courses must be strictly observed unless waived by permission of the mathematics department. Courses marked with a dagger (†) will be offered at the discretion of the department.

M 103 Fundamental Mathematics
Required at the inception of the program of study of all students (day and evening) who do not show sufficient competency with fundamental arithmatic and algebra, as determined by placement examination. Review and individualized help as needed in the arithmetic of whole numbers, decimals, fractions, and percents. Introduction to sets. Elementary algebra. Topics from logic, probability, and statistics as time permits. (Students placed in M 103 must successfully complete this course before taking any other course having mathematical content.) 3 credit hours (4 to 6 class hours per week).

M 105 Introductory College Mathematics
Introductory college mathematics for the liberal arts student including a variety of mathematical ideas chosen to illustrate the nature and importance of mathematics in human culture. An inductive approach based on experimentation and discovery. 3 credit hours.

M 109 Elementary College Algebra
Prerequisite: M 103 or placement by the department. A review of the fundamental operations and an extensive study of functions, exponents, radicals, linear and quadratic equations. Additional topics include ratio, proportion, variation, progression and the binomial theorem. 3 credit hours.

M 115 Pre-Calculus Mathematics
Prerequisite: A grade of C or higher in M 109 or placement by the department. Designed to offer the foundation needed for the study of calculus. Polynomials, algebraic functions, elementary point geometry, plane analytic trigonometry and properties of exponential functions. 4 credit hours.

COURSES

†M 116 Survey of Calculus
Prerequisite: M 115. An intuitive approach to topics in functions, analytic geometry, differential and integral calculus and probability. Designed for insight into, and appreciation of, the methods of analysis. 3 credit hours.

M 117 Calculus I
Prerequisite: A grade of C or higher in M 115 or placement by the department. The first-year college course for majors in mathematics, science and engineering; and the basic prerequisite for all advanced mathematics. Introduces differential and integral calculus of functions of one variable, along with plane analytic geometry. 4 credit hours.

M 118 Calculus II
Prerequisite: M 117. Continuation of first-year calculus, including methods of integration, the fundamental integration theorem, differentiation and integration of transcendental functions and varied applications. 4 credit hours.

M 121 Algebraic Structures I
A first course in an orientation to abstract mathematics: elementary logic, sets, mappings, relations, operations, elementary group theory. Open to all freshmen and sophomores. 3 credit hours.

M 122 Algebraic Structures II
Prerequisite: M 121 or permission of the department. A continuation of M 121 including a variety of topics. 3 credit hours.

M 127 Finite Mathematics
Basic discrete functions with numerous applications in the social sciences, elementary finite differences; topics from probability, matrices and introduction to linear programming. 3 credit hours.

M 137 Calculus Topics
Prerequisite: consent of the department. The theoretical material of the standard first year of calculus, including limits, chain rules, mean value theorems and a discussion of the fundamental theorem of integral calculus. Upon successful completion, the student is qualified for M 203. 4 credit hours.

M 203 Calculus III
Prerequisite: M 118. The calculus of multiple variables, covering third-dimensional topics in analytics, linear algebra, and vector analysis, plus partial differentiation, multiple integration, infinite series and indeterminate forms. 4 credit hours.

M 204 Differential Equations
Prerequisite: M 203. The solution of ordinary differential equations, including the use of Laplace transforms. Existence of solutions, series solutions, matrix methods, nonlinear equations and varied applications. 3 credit hours.

M 228 Elementary Statistics
Prerequisite: one previous course in college mathematics. A noncalculus based course which includes basic probability theory, random variables and their distributions, estimation and hypothesis testing, regression and correlation. Emphasis on an applied approach to statistical theory with applications chosen from many different fields of study. (Not open to students who have taken calculus.) 3 credit hours.

M 231 Linear Algebra
Prerequisite: M 203. Linear spaces and systems, matrices, linear transformations, quadratic forms, eigenspaces and other topics. 3 credit hours.

†M 301 Linear Analysis
Prerequisites: M 204, M 231. Linear vector spaces, infinite series, transformations, generalized Fourier series, solutions of partial differential equations. 3 credit hours.

M 303 Advanced Calculus
Prerequisite: M 204. A survey course in applied mathematics. Vector calculus: line and surface integrals, integral theorems of Green and Stokes, and the divergence theorem. Complex variables: elementary functions, Cauchy-Riemann equations, integration, Cauchy integral theorem, infinite series, calculus of residues and conformal mapping. 3 credit hours.

M 309 Advanced Differential Equations
Prerequisite: M 204. Theoretical analysis and applications of nonlinear differential equations. Phase plane and space, perturbation theory and techniques, series and related methods, stability theory and techniques and relaxation phenomena. 3 credit hours.

M 321 Modern Algebra I
Prerequisites: M 121, M 231. Groups, rings, integral domains, fields, polynomials. 3 credit hours.

†M 325 Number Theory
Prerequisite: M 121. Topics are selected from the following: mathematical induction, Euclidean algorithm, integers, number theoretic functions, Euler-Fermat theorems, congruence, quadratic residues and Peano axioms. 3 credit hours.

M 338-339 Numerical Analysis I and II
Prerequisites: M 204, IE 102. Approximation and error evaluation. Finite difference approximation by polynomial and orthogonal series, solutions of ordinary differential equations; solutions of elliptic, parabolic, and hyperbolic partial differential equations; interpolation and basic integral equation solutions. 6 credit hours.

†M 341 Sets and Ordered Structures
Prerequisite: M 121. Axiomatic set theory based on the Zermelo-Fraenkel theory, algebra of sets, relations and functions, finite and infinite sets, order, axiom of choice and its equivalents. 3 credit hours.

†M 343 Projective Geometry
Prerequisites: M 121, M 231. Projective transformations, fixed points, invariants, cross-ratio, conics, Euclidean and non-Euclidean geometeries. 3 credit hours.

†M 345 Tensor Analysis
Prerequisites: M 204, M 231. The properties of vectors and tensors in Cartesian and in general curvilinear coordinate systems. Topics covered include: invariance properties, transformation laws, calculus of tensors, covariant differentiation, surface theory. Applications are considered in areas such as rigid body dynamics, elasticity, fluid mechanics, electricity and magnetism and geometry. 3 credit hours.

M 361 Mathematical Modeling
Prerequisites: M 231 and at least junior standing. Problem solving through mathematical model building. Emphasis on applications of mathematics to the social, life and managerial sciences. Topics are selected from probability, graph theory, Markov processes, linear programming, optimization, game theory, simulation. 3 credit hours.

M 371 Probability and Statistics I
Prerequisite: M 203. Axiomatic study of probability: sample spaces, combinatorial analysis, independence and dependence, random variables, distribution functions, moment generating functions, central limit theorem. 3 credit hours.

†M 381 Real Analysis I
Prerequisites: M 121, M 203. Foundations of analysis, sets and functions, real and complex number systems; limits, convergence and continuity, sequences and infinite series, differentiation. 3 credit hours.

M 403 Techniques in Applied Mathematics
Prerequisite: M 204. Techniques in applied analysis including Fourier series; orthogonal functions such as Bessel functions, Legendre polynomials, Chebychev polynomials, Laplace and Fourier transforms; product solutions of partial differential equations and boundary value problems. (M 303 is not a prerequisite for this course.) 3 credit hours.

†M 412 Real Analysis II
Prerequisite: M 381. Continuation of M 381 including Riemann-Stieltjes integration theory and an introduction to measure theory and the Lebesque integral. 3 credit hours.

†M 422 Modern Algebra II
Prerequisite: M 321. Continuation of M 321 including topics such as: vector spaces, modules, commutative ring theory, Galois theory. 3 credit hours.

†M 423 Complex Variables
Prerequisite: M 204. For mathematics, science and engineering students. Review of elementary functions and Euler forms; holomorphic functions, Laurent series, singularities, calculus of residues, contour integration, maximum modulus theorem, bilinear and inverse transformations, conformal mapping, and analytic continuation. 3 credit hours.

†M 441 Topology
Prerequisite: M 381. Topics selected from the following: Hausdorff neighborhood relations; derived, open and closed sets; closure; topological space; bases; homeomorphisms; relative topology; product spaces; separation axioms; metric spaces; connectedness and compactness. 3 credit hours.

M 472 Probability and Statistics II
Prerequisite: M 371. Elements of the theory of point estimation, maximum likelihood estimates, theory of testing hypotheses, power of a test, confidence intervals, linear regression, experimental design and analysis of variance, correlation, and nonparametric tests. 3 credit hours.

M 491-499 Department Seminar
A study of a mathematical topic or topics not covered in the above courses. Subject of study will be announced by the Mathematics Department in advance. A paper and/or seminar talk, suitable for presentation to all interested mathematics faculty, will be required. 3 credit hours each.

M 599 Independent Study
Prerequisite: consent of faculty member and chairman of department. Opportunity for the student, under the direction of a faculty member, to explore an area of interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

Mechanical Engineering

ME 101 Engineering Graphics
An introduction to the principles and techniques of graphic communication. Fundamentals of orthographic projections; sections; applied geometry; auxiliary views; analysis of point, line and plane relationships; detail and assembly drawing of simple machine parts. 3 credit hours.

COURSES

ME 102 Engineering Drawing and Design
Prerequisite: ME 101. For technical students and draftsmen, covering layout of assembly drawings; detailing of their parts, properly dimensioned, for interchangeable manufacture; use of ASA tables of metal fits for machine parts; use of threads and fasteners with the use of tolerances and limits. 3 credit hours.

ME 204 Dynamics
Prerequisites: CE 201 or CE 205, M 118 (M 118 may be taken concurrently). Kinematics and dynamics of particles and rigid bodies with emphasis on two dimensional problems. Vector representation of motion in retangular, polar and natural coordinates. Impulse-momentum and work-energy theorems. Rigid bodies in translation, rotation and general plane motion. 3 credit hours.

ME 215 Instrumentation Laboratory
Laboratory experiments introducing the electromechanical equipment and measurement techniques used to determine temperature, stress, fluid flow and other parameters of concern to the mechanical engineer. Note: Students are charged for a standard three-credit hour course. 2 credit hours.

ME 301 Thermodynamics I
Prerequisites: M 118. Classical thermodynamics treatment of first and second laws. Thermal and caloric equations of state. Closed and open systems, and steady flow processes. Absolute temperature, entropy, combined first and second laws. Power and refrigeration cycles. 3 credit hours.

ME 302 Thermodynamics II
Prerequisites: ME 301, M 203 (M 203 may be taken concurrently). Extensions and applications of first and second laws; availability, combustion process, phase and chemical equilibrium, ideal gas mixtures. Maxwell's relations. Introduction to statistical thermodynamics. Advanced thermodynamic cycles. 3 credit hours.

ME 307 Strength of Materials II
Prerequisite: CE 202. Elastic and plastic behavior of structural elements such as beams, columns and shafts under direct and combined loading. Ultimate strength design, theory of failure, composite member design and an introduction to indeterminate structures. 3 credit hours.

ME 311 Machine Elements
Prerequisite: CE 202. Analysis and design of machine elements to meet specified operating conditions. Stresses, deformations and other factors in design of machine parts. Static theories of failure. Fatigue strength, endurance limit and fatigue design methods via Soderberg and Goodman diagrams. Finite life design. Application to machine elements such as screws, bolts, ball and roller bearings, clutches and brakes. 3 credit hours.

ME 312 Mechanical Design
Prerequisite: ME 307 or instructor's consent. Continuation of ME 311. Topics include shaft design, springs, hydrodynamic lubrication, gears. 3 credit hours.

ME 315 Mechanics Laboratory
Prerequisites: CE 202, ME 204. Students conduct selected tests in the fields of mechanics of materials and vibrations. Emphasis placed on organization of the experiment, measurement techniques, sources of error and organization of the report. Note: Students are charged for a standard three-credit-hour course. Laboratory fee. 2 credit hours.

ME 321 Fluid Mechanics
Prerequisites: ME 204, M 203. Fluid kinematics; continuity equation, vector operations. Momentum equation for frictionless flow; Bernouli equation with applications. Irrotational flow; velocity potential, Laplace's equation, dynamic pressure and lift. Stream function for incompressible flows. Rotational flows; vorticity, circulation, lift and drag. Integral momentum analysis. Navier Stokes equation; stress tensor. Newtonian fluid. Boundary layer approximations. 3 credit hours.

ME 322 Introduction to Gas Dynamics
Prerequisite: ME 302, ME 321 (ME 321 may be taken concurrently). Compressible fluid flow with emphasis on one-dimensional ducted steady flows with heat transfer, frictional effects, shock waves and combined effects. Introductory considerations of two- and three-dimensional flows. Occasional demonstration will accompany the lectures. 3 credit hours.

ME 335 Tool Design
Prerequisite: CE 201. Basic techniques of tool design, methods analysis, drill jig design, tolerances and allowances, cutting tools, die design, gauges and fixtures. 3 credit hours.

ME 336 Tool Engineering
Prerequisite: ME 335 or instructor's consent. A continuation of ME 335 with emphasis on economics, estimating and process planning. Students design projects requiring the complete planning and designing necessary to manufacture machine parts. 3 credit hours.

ME 343 Mechanisms
Prerequisite: ME 204. Graphic and analytical methods for determining displacements, velocities and accelerations of machine components. Application to simple mechanisms such as linkages, cams, gears. 3 credit hours.

ME 344 Mechanics of Vibration
Prerequisites: ME 204, M 204. The mathematical relationships necessary for the solution of problems involving the vibration of lumped and continuous systems; damping; free and forced motions; resonance; isolation; energy methods; balancing; single, two and multiple degrees of freedom; vibration measurement. 3 credit hours.

ME 401 Mechanical Systems Analysis
Prerequisites: ME 204, M 204. Dynamic systems and their characteristics. Analogy of electrical, mechanical and other systems. Mixed systems; dimensional analysis; design considerations. 3 credit hours.

ME 403 Introduction to Flight Propulsion
Prerequisites: ME 322, instructor's consent. A senior course designed for those students who intend to work or pursue further studies in the aerospace field. Among the topics covered are: detonation and deflagration, introductory one-dimensional nonsteady gas flows, basic concepts of turbomachinery and survey of the contemporary propulsive devices. Shock tubes, supersonic wind tunnels and flame propagation demonstrations will accompany the lectures. 3 credit hours.

ME 404 Heat and Mass Transfer
Prerequisites: ME 302, ME 321, M 204 (ME 321 may be taken concurrently). Conduction in solids, solution of multi-dimensional conduction problems, unsteady conduction, radiation, boundary layer and convection. Introduction to mass transfer. The lectures will include occasional demonstrations of convection, radiation, heat exchangers. 3 credit hours.

ME 405 Advanced Mechanical Design
Prerequisite: ME 321. Selected and advanced topics related to the design of machine elements such as hydrodynamic theory of lubrication and principles of hydraulic machines with application to hydraulic couplings. 3 credit hours.

ME 406 Turbomachinery
Prerequisites: ME 302, ME 321. Review of basic thermodynamics and fluid mechanics. Dimensional analysis. Specific speed. Classification of turbomachines. Cavitation. Losses. Definitions of efficiency. Theories of turbomachines. Design considerations for stator blades and rotor blades. Computer-aided design. 3 credit hours.

ME 407 Solar Energy Thermal Processes
Prerequisite: ME 404 (may be taken concurrently). Introduction to the fundamentals of solar energy thermal processes including solar radiation, flat plate and focusing collectors, energy storage, hot water, heating, cooling and auxiliary system components. Emphasis on the design and evaluation of systems as they pertain to commercial and residential buildings. 3 credit hours.

ME 408 Advanced Mechanics
Prerequisites: ME 204, M 204. Plane and spatial motion of particles and rigid bodies, inertia tensor, relative motion, gyroscopes, central force motion. Lagrangian and Hamiltonian methods. 3 credit hours.

ME 410-411 Introduction to Nuclear Engineering I and II
Prerequisite: M 204. The fundamental scientific and engineering principles of nuclear reactor systems. Reactor design and behavior related to fission process, its associated radiations and engineering principles. 6 credit hours.

ME 415 Thermo/Fluids Laboratory
Prerequisites: ME 302, ME 321, ME 404. A survey of experiments and laboratory investigations covering the areas of fluid mechanics, thermodynamics, heat transfer and gas dynamics. Note: Students are charged for a standard three-credit-hour course. Laboratory fee. 2 credit hours.

ME 512 Senior Seminar
Open to seniors with chairman's approval. Individual oral presentations by students of material researched on a theme selected by students and faculty at the beginning of the term. 3 credit hours.

ME 599 Independent Study
Prerequisites: consent of faculty supervisor and approval of department chairman. Independent study provides an opportunity for the student to explore an area of special interest under faculty supervision. 1-3 credit hours per semester with a maximum of 12.

Management Science

MG 100 Introduction to Business
This course will provide students with a fundamental understanding of modern business organization. The introductory section will focus on an overview of the American business system; its economic foundations, ethical environment, legal and organizational framework. The bulk of the course will deal with the principal organizational functions of production, marketing and finance. Specific sub-topics to be studied include an introduction to accounting, data processing, decision making, personnel administration, promotion, public administration, international business, management science and small business administration. Not open to juniors and seniors in the School of Business. 3 credit hours.

COURSES

MG 125 Management and Organization
A study of management systems as they apply to all organizations. Managerial functions, principles of management, quantitative and behavioral aspects of the management process are examined. 3 credit hours.

MG 200 Business Systems Analysis
Prerequisite: junior standing or consent of the instructor. A survey of the use and application of systems analysis to examine problems of both profit and nonprofit business enterprises. Origins of systems analysis, basic concepts, and elements of systems and the systems approach. 3 credit hours.

MG 205 EDP Communication and Documentation
Prerequisite: junior standing or consent of the instructor. Presents the necessary skills to document computer software packages. Comparative review of documentation methods, systems and standards now in use, design and preparation of program and system user manuals. 3 credit hours.

MG 231 Industrial Relations
Prerequisite: junior standing. A survey of the industrial relations and the personnel management systems of an organization through an integrated behavioral, quantitative and systems approach. Manpower planning/forecasting and information; labor markets; selection and placement; training and development; compensation; leadership; government/employer and labor/management relations. 3 credit hours.

MG 317 Small Business Management
Prerequisite: junior standing. A realistic examination of some of the characteristics, opportunities, risk-taking and decision-making in new business enterprises or self-employment ventures. 3 credit hours.

MG 324 Development of Managerial Thought
Prerequisite: MG 125. In-depth study of the evolution of modern management and organization theory in order to develop a historical perspective of management thought. Research in the field will be analyzed and applied to current practices. 3 credit hours.

MG 350 Advanced Management
Prerequisite: MG 125. A reinforcement of the principles and practices of management and organization theory from MG 125. Application of management practices to the functional areas, the human factor in organizations, current research and readings. 3 credit hours.

MG 400 Management Planning and Control Systems
Prerequisite: junior standing or consent of the instructor. An examination of current concepts, techniques and working practices necessary to develop and implement a system for management planning and control. Development of tools such as PERT, CPM and other network analysis systems; computer assisted decision making. 3 credit hours.

MG 415 Comparative Management
Prerequisites: IB 312, MG 125. An analysis and examination of management and organizational behavior against a background of diversified cultural systems. 3 credit hours.

MG 450-454 Special Studies in Business
Prerequisite: junior standing. Special studies in business and public administration. Work may include study and analysis of specific problems within units of business or government and application of theory to those problems, programs of research related to a student's discipline, or special projects. Several sessions may run concurrently. 3 credit hours.

MG 455 Managerial Effectiveness
Prerequisites: MG 350, MG 324. An examination of current practices used in identifying and developing effective managers. The problems of the managerial environment, approaches used to alleviate these problems, development of organizational and managerial effectiveness. 3 credit hours.

MG 460 Information Systems for Operations and Management
Prerequisite: junior standing or consent of the instructor. A development of the steps necessary to design and implement an integrated information system which can benefit all levels of management. Analysis of information requirements, design approaches, processing methods, data management, organizational and social implications, planning and control systems, analytical and simulation models. 3 credit hours.

MG 489 Internship Practicum
Prerequisites: senior standing and consent of the department chairman. A monitored field experience in business or industry subject to academic guidance and review. 3 credit hours.

MG 512 Contemporary Issues in Business and Society
Prerequisite: senior standing. A rigorous examination of competing concepts of the role of business in society. A capstone, integrative course relating the firm to its environment including issues arising from aggregate social, political, legal and economic factors. 3 credit hours.

MG 515 Management Seminar
Prerequisite: MG 455. An introduction to contemporary publications and the findings of research study reports. Analysis, interpretation and determination of impact of publications on the theory and practice of management. 3 credit hours.

MG 550 Business Policy
Prerequisite: senior standing. An examination of organizational policies from the viewpoint of top-level executives, and a development of analytical frameworks for achieving the goals of the total organization. Discussion of cases and development of oral and written skills. 3 credit hours.

MG 556 Operations Management
The design, implementation, operation and control of productive enterprises, whether private or public, profit or non-profit. Integration of system analysis, management science, operations research and management, and organizational theory. 3 credit hours.

MG 560 Business Systems Simulation
Prerequisite: QA 216. The design, development and application of computer simulation models as tools of analysis for business, economic and electronic computer systems. Deterministic and stochastic decision models, computer simulation using several simulation languages. 3 credit hours.

MG 599 Independent Study
Prerequisite: project, student and faculty director must be approved by the department chairman and the dean of the business school. Independent study on a project of interest to the student under the direction of a faculty member designated by the department chairman. 3 credit hours.

Marketing

MK 105 Principles of Marketing
Prerequisite: EC 133. The fundamental functions of marketing involving the flow of goods and services from producers to consumers. Marketing methods of promotion, pricing, product decisions and distribution channels. 3 credit hours.

MK 205 Consumer Behavior
Prerequisite: MK 105. A study of the principal comprehensive marketing models which focus on buyer decision processes. Topics include brand switching decisions, measures of media effectiveness, market segmentation and other marketing techniques. 3 credit hours.

MK 302 Industrial Marketing
Prerequisite: MK 105. Practices and policies in the distribution of industrial goods including purchasing, market analysis, channels of distribution, pricing, competitive practices and operating costs. 3 credit hours.

MK 307 Advertising and Promotion
Prerequisite: MK 105. The design, management and evaluation of the various communications programs involved in marketing and public relations. 3 credit hours.

MK 316 Sales Management
Prerequisite: MK 105. The management of a sales organization. Recruiting, selecting, training, supervision, motivation and compensation of sales personnel. 3 credit hours.

MK 413 International Marketing Management
Prerequisites: IB 312, MK 105. Applied marketing decision making in international firms. The development of marketing strategy and techniques in foreign markets. 3 credit hours.

MK 442 Marketing Research and Information Systems
Prerequisites: MK 105, QA 216, junior standing. Research as a component of the marketing information system. Research design, sampling methods, data interpretation and mangement of the marketing research function. 3 credit hours.

MK 460 Consumer Protection
Prerequisite: MK 105, junior standing. The socio-legal framework within which consumers make purchase decisions. The focal point of the course is to develop an analytical framework for evaluating the informational needs of consumers and consistent regulatory policies. 3 credit hours.

MK 470 Business Logistics
Prerequisites: MK 105, QA 118, junior standing. The design and administration of systems to control physical product flows. Both spatial and temporal constraints are treated in the development of transportation, warehousing and manufacturing systems. 3 credit hours.

MK 515 Marketing Management
Prerequisites: MK 105, MK 442, senior standing. The analysis, planning and control of the marketing effort within the firm. Emphasis is on case analysis. This is a marketing capstone course. 3 credit hours.

MK 599 Independent Study
Prerequisites: MK 105, junior standing. A planned program of individual study under the supervision of a member of the faculty. 3 credit hours.

Materials Technology

MT 200 Engineering Materials
Prerequisite: CH 103. A study of the properties of the principal engineering materials of modern technology: steels and nonferrous alloys and their heat treatment, concrete, wood, ceramics and plastics. Gives engineers sufficient background to aid them in selecting materials and setting specifications. 3 credit hours.

COURSES

MT 219 Physical Metallurgy
Prerequisite: CH 105. Introduction to the relationships between atomic structure and macroscopic properties such as mechanical strength and ductility. Atomic bonding, crystallography, phase equilibrium and phase transformations are among the topics considered. 3 credit hours.

MT 220 Electronic Materials
Prerequisite: PH 205. Study of transport and rearrangement of charge to determine electric and magnetic properties of solids. Semiconductors, superconductors and magnetic materials are among the topics considered. 3 credit hours.

MT 301 Welding Metallurgy
Prerequisite: MT 219. Study of welding and brazing procedures of ferrous and nonferrous alloys, with consideration of macro and microstructures of welded members. 3 credit hours.

MT 302 Polymeric Materials
Prerequisite: CH 105. Chemistry and physical properties of rubber and plastic materials. Consideration of both fundamental principles and engineering applications. 3 credit hours.

MT 304 Mechanical Behavior of Materials
Prerequisite: MT 219. Detailed study of elastic and plastic deformation of materials at room temperature and elevated temperatures. Dislocation theory and michroplasticity models considered. 3 credit hours.

MT 310 Materials Laboratory
Prerequisite: MT 219. Laboratory documentation of the effects of heat treatment in annealing and hardening both ferrous and nonferrous materials. Microscopic observation and photography. Other experiments in materials engineering. 3 credit hours.

MT 324 Nuclear Reactor Materials
Prerequisite: MT 219. Consideration of nuclear reactors, the production and fabrication of metals and alloys used as reactor components, non-destructive testing and radiation damage of materials. 3 credit hours.

MT 331 Nonferrous Metallurgy
Prerequisite: MT 219. The physical metallurgy of aluminum, copper, magnesium and other nonferrous metals. Alloying, fabrication and consideration of materials properties which make nonferrous metals competitive with steels. 3 credit hours.

MT 342 Steels and Their Heat Treatment
Prerequisite: MT 219. Fundamentals of ferrous physical metallurgy such as iron-carbon phase diagram, transformation diagrams, hardenability and the effects of alloying elements. Heat treating discussed in terms of resulting microstructures and physical properties. 3 credit hours.

MT 400 Materials Reactions
Prerequisite: MT 219. Consideration of chemical reactions in the liquid and solid state of importance to the field of materials engineering. Topics to include extractive metallurgy, internal oxidation, surface treatment and recycling of secondary materials. 3 credit hours.

MT 500 Research Project
Prerequisites: MT 331, MT 342, senior status. An independent design, theoretical analysis or laboratory investigation, chosen by the student and approved by the chairman of the department. The work is performed by the student with frequent critiques by a faculty member. 3 credit hours.

MT 599 Independent Study
Prerequisites: consent of faculty supervisor and approval of department chairman. Independent study provides an opportunity for the student to explore an area of special interest under faculty supervision. 1-3 credit hours per semester with a maximum of 12.

World Music

MU 106 Chorus
Styles of group singing, survey of choral music literature from around the world. 3 credit hours.

MU 111 Introduction to Music
Basic forms and styles of music in the Western World. Music appreciation. 3 credit hours.

MU 112 Introduction to World Music
Non-Western musical styles, their cultures and aesthetics; music of the indigenous cultures of the Americas and the advanced musics of the Near East and Far East; emphasis on India, the Orient, Southeast Asia, Africa and Indonesia. 3 credit hours.

MU 116 Performance
Open to all students interested in ensembles or private instruction. Students with adequate scholastic standing may carry this course for credit in addition to a normal program. 1-8 credit hours; maximum 3 credit hours per semester.

MU 150-151 Introduction to Music Theory
Fundamentals of music: notation, physical and acoustical foundations; harmony and melody; modality, tonality, atonality; consonance and dissonance; tension; introductory composition; and ear training. 6 credit hours.

MU 198-199 Introduction to American Music
Music of the North American continent from the Puritans to the present day; both European and non-European musical traditions, with emphasis on twentieth century developments. 6 credit hours.

MU 201-202 Analysis and History of European Art Music
The growth of Western art music from its beginnings to the present day. Analysis of musical masterpieces on a technical and conceptual basis. 6 credit hours.

MU 250-251 Theory and Composition
Investigation of music theory in various parts of the world, including the Western Art Tradition. Exercises in the composition of music within these theoretical constructs. Ear training and keyboard harmony. 6 credit hours.

MU 299 Problems of Music
Music as an art form throughout the world. Music aesthetics and its relationship to the performance and composition of music. 3 credit hours.

MU 300 Studies in Music I
Area studies in music and its parent culture. Cultural theory as related to the music; instruments of the area and their etymologies; performance practices; the social role of music, both art and folk. Areas offered depend on availability of staff: China, Japan, the Near East, the Indian subcontinent, Africa, American Indian, Afro-American, Latin America, the Anglo-Celtic tradition and others. 3 credit hours.

MU 350 Studies in Music II
Area studies in musical forms; their history, evolution, and resultant metamorphoses, performance practices, and extant forms. Areas offered depend upon availability of staff. 3 credit hours.

MU 416 Advanced Performance
Prerequisite: permission of the department staff and a faculty adviser. Preparation and presentation of an instrumental or vocal performance indicating sufficient proficiency to warrant the awarding of a degree in world music. 3 credit hours.

MU 500 Seminar in Advanced Research
Prerequisite: permission of the instructor. Bibliographical studies of major world music areas; investigation of current and historical musicological theories, analysis and criticism of musicological area literatures. 3 credit hours.

MU 550 Studies in Urban Ethnic Music
Prerequisite: permission of the instructor. The music tradition of inner-city ethnic groups; emphasis on the operation of the oral tradition in the preservation of cultural values and customs as evidenced through music. Classroom discussion will be balanced by field research in the urban vicinity. 3 credit hours.

MU 599 Independent Study
Opportunity for the student under the direction of a faculty member to explore an area of personal interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

Psychology

P 111 Introduction to Psychology
Understanding human behavior. Motivation, emotion, learning, personality development, intelligence, as they related to normal and deviant behavior. Applying psychological knowledge to everyday personal and societal problems. 3 credit hours.

P 212 Business and Industrial Psychology
Prerequisite: P 111. Psychological principles and research as they apply to the problems of working with people in organizations. Analysis of problems and decisions in the use of human resources, including selection and placement, criterion measurement, job design, motivation. 3 credit hours.

P 216 Psychology of Human Development
Prerequisite: P 111. Human development over the life cycle—conception through death; the changing societal and institutional framework; key concepts and theoretical approaches; understanding development through biography; child rearing and socialization here and abroad. 3 credit hours.

P 251 Behavior Therapies
Prerequisite: P 111. Principles of therapeutic behavior management. Alteration of maladaptive behavior patterns in institutional, neighborhood, home, educational and social settings by operant and respondent reinforcement techniques. Habit management in oneself and one's children. 3 credit hours.

P 301 Statistics for Behavioral Sciences
Prerequisite: any college-level mathematics course. Concepts and assumptions underlying statistical methods essential to design and interpretation of research on human subjects. Fundamental descriptive and inferential methods. 3 credit hours.

P 305 Experimental Methods in Psychology
Corequisite: P 301. Methods of designing and analyzing psychological experiments. The scientific method as applied to psychology. Consideration of research techniques, experimental variables, design problems, data analysis. 3 credit hours.

COURSES

P 306 Psychology Laboratory
Prerequisite: P 305. Group and individual experiments to be carried out by students. Research techniques for studying learning, motivation, concept formation. Data analysis and report writing. Offered only in alternative years beginning with Spring 1981. 3 credit hours.

P 315 Human and Animal Learning
Prerequisite: P 111. Different types of human and animal learning. Learning as an adaptive mechanism. Psychological principles underlying learning. Practical applications of learning principles. 3 credit hours.

P 321 Social Psychology
Prerequisites: P 111, SO 113. The interdependence of social organizations and behavior. The interrelationships between role systems and personality; attitude analysis, development and modification; group interaction analysis; social conformity; social class and human behavior. 3 credit hours (Same as SO 320).

P 330 Introduction to Community Psychology
Prerequisite: P 111. Key concepts of community psychology/community mental health. Community problems, needs and resources. The helping relationship. Intervention techniques. Programming services. Understanding behavioral differences. Careers in community psychology. 3 credit hours.

P 331-332 Undergraduate Practicum in Community Psychology
Corequisites: P 330 or permission of the instructor. Supervised field experience in community psychology/mental health settings. Exploration of service delivery. Development of basic repertoire of helping skills. Behavioral log. Project reporting. Understanding helping roles at individual, small group, and institutional levels. 1-6 credit hours with a maximum of 3 credit hours per semester.

P 336 Abnormal Psychology
Prerequisite: P 111. Psychological and organic factors in personality disorganization and deviant behavior. Psychodynamics and classifications of abnormal behavior. Disorders of childhood, adolescence and old age. Evaluation of therapeutic methods. 3 credit hours.

P 341 Psychological Theory
Prerequisite: P 111. Contemporary theory in psychology. Emphasis on those theories which have most influenced thinking and research in sensation, perception, learning, motivation, personality. Offered only in alternate years. 3 credit hours.

P 350 Human Assessment
Prerequisite: P 301. Basic principles of measurement, applied to problems of the construction, administration and interpretation of standardized tests in psychological, educational and industrial settings. Offered only in alternate years. 3 credit hours.

P 361 Physiological Psychology
Prerequisites: P 111; SC 121, SC 122 or SC 123. Endocrinological, neural, sensory and response mechanisms involved in learning, motivation, adjustment, emotion and sensation. Offered only in alternate years. 3 credit hours.

P 370 Psychology of Personality
Prerequisites: P 111, junior class standing. Theory and method in the understanding of normal and deviant aspects of personality; theories of Freud, Jung, Rogers, neo-Freudians and others. 3 credit hours.

P 599 Independent Study
Prerequisites: consent of faculty member and chairman of department. Opportunity for the student under the direction of a faculty member to explore an area of personal interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

Public Administration

PA 101 Introduction to Public Administration
The nature of and problems involved in the administration of public services at the federal, state, regional and local levels. 3 credit hours.

PA 150 Health Care I
Special course for hotel management majors. Admission to course by permission of the instructor. 1 credit hour.

PA 151 Health Care II
Prerequisite: PA 150. Special course for hotel management majors. Admission to course by permission of the instructor. 1 credit hour.

PA 302 Public Administration Systems and Procedures
Stressed are the major staff management functions in government and in non-profit agencies: planning, budgeting, scheduling and work analysis. 3 credit hours.

PA 305 Institutional Budgeting and Planning
Budgeting as an institutional planning tool, as a cost control device and as a program analysis mechanism is stressed. Attention is given to the salary expense budget, the revenue budget, the capital budget and the cash budget. 3 credit hours.

PA 307 Urban and Regional Management
Methods and analysis of decision-making related to urban and regional problems. Topics include housing, land use, economic development, transportation, pollution, conservation and urban renewal. 3 credit hours.

PA 308 Health Care Delivery Systems
An examination of the health care delivery systems in the U.S., including contemporary, economic, organizational, financing, manpower, cost and national health insurance issues. 3 credit hours.

PA 315 Metropolitan Planning
Analysis of demographic data, public expenditures and land-use-control surveys. Land-use controls, planned unit development, the development of new communities, and urban growth policy are discussed. State and federal policies affecting urban growth are stressed. 3 credit hours.

PA 316 Urban Housing
Encompassed are the subjects of housing management, planning and finance and policy. Specific topics such as the provision of low-income housing, the use of mortgage insurance, interest subsidies, site planning, rent controls, code enforcement, mortgage markets and the rise in housing abandonment are stressed. 3 credit hours.

PA 320 Municipal Finance and Budgeting
This course involves the analysis of fiscal policy at the municipal level. The financing and budgeting of services and improvements by local government. 3 credit hours.

PA 390 Administrative Law
The basic legal arrangement of administrative organization; rule governing the use of administrative powers; legal procedures for enforcement of executive responsibilities. 3 credit hours.

PA 405 Public Personnel Practices
Study of the civil service systems of the federal, state and local governments including a systematic review of the methods of recruitment, evaluation, promotion, discipline, control and removal. 3 credit hours.

PA 408 Collective Bargaining in the Public Sector
Analysis of collective bargaining in the public sector, with emphasis on legislation pertaining to government employees. 3 credit hours.

PA 490 Public Health Administration
An examination of public health activities, including public health organization, environmental health, disease control, use of information systems and social services. 3 credit hours.

PA 491 Public Health and Environmental Law
The role of the law in public health and environmental protection. Emphasized are the legal tools and administrative techniques used in the enforcement and administration of public health and environmental control policy. 3 credit hours.

PA 512 Seminar in Public Administration
Selected topics related to public administration are chosen. 3 credit hours.

PA 599 Independent Study
Independent study on a project of interest to the student under the direction of a faculty member approved by the department chairperson. 3 credit hours.

Physical Education

PE 100 Leisure Living
Three distinct units designed to give the student a strong foundation of knowledge and skills for dealing with the abundance of leisure time and sedentary life style of today's society. Personal aspects of healthful living, first aid skill and technique and an in-depth study of leisure time activities such as tennis, sailing, golf, bicycling, aquatics, skating, bowling and racquet games including an examination of their historical, mechanical, physiological and sociological implications are offered. A separate grade is given for each section and completion of the three-credit course satisfies degree requirements for physical education. 3 credit hours.

PE 111-112 Physical Education
Each section emphasizes a different lifetime or carry-over sport designed to give the student the experience of developing ability and skill in a physical activity which will help meet the demands of a future characterized by an abundance of leisure time. Activities such as tennis, golf, volleyball, paddleball, handball, bowling, skating, swimming, sailing, skiing, softball, badminton and bicycling are taught in a recreational atmosphere created to encourage students to continue and further develop their interests and skills through involvement in intramurals and community recreation programs of a private or commercial nature. Students may register for as many sections or semesters of these courses as their interests warrant. No credit, **required for graduation.**

Physics

PH 100 Introductory Physics
Primarily for liberal arts and business students interested in a broad, nonmathematical understanding of physics. Emphasis on the basic concepts of physics, their application to our everyday environment and their impact on society. 3 credit hours.

PH 101 Energy—Present and Future
Intended primarily for business and liberal arts students. Explores the nature, role and economic impact of energy in our society. Topics include: the nature and growth of energy consumption, physical limits to energy production and consumption, environmental effects and comparisons of energy alternatives. Special emphasis on the technical, environmental and economic aspects of nuclear power as well as energy sources of the future such as fast breeder reactors, fusion, solar and geothermal power. 3 credit hours.

COURSES

PH 103-104 General Physics I and II
Primarily for life science majors with no calculus background. Basic concepts of classical physics: fundamental laws of mechanics, heat, electromagnetism, optics, and conservation principles. Introduction to modern physics: relativity and quantum theory, atomic, nuclear and solid-state physics. Application of physical principles to life sciences. 6 credit hours.

PH 105-106 General Physics Laboratory I and II
Should be taken concurrently with PH 103-104. Laboratory Fee. 2 credit hours.

PH 130 Radiation Safety
Intended for students in occupational safety and hygiene, fire science, forensic science and related fields, as well as science and engineering students with interests in this area. Topics include: the nature of radiation and radioactivity, the interaction of radiation with matter, biological effects of radiation, detection and measurement of radiation, shielding considerations, dosimetry, and standards for personal protection. 3 credit hours.

PH 140 Radioactivity Laboratory Technique
Prerequisite: one semester of laboratory science. Provides a practical working knowledge of radioactivity techniques to students in any branch of science engineering or forensics, or to anyone wishing knowledge of the role of nuclear technology today. Experiments may be completed in biology, chemistry, engineering, forensics or physics, according to the interest of the student. Laboratory Fee. 2 credit hours.

PH 150 Mechanics, Heat and Waves with Laboratory
Prerequisites: M 117 or instructor's consent (M 117 may be taken concurrently). Introductory course for physical science and engineering majors. Kinematics, Newton's laws, conservation principles for momentum, energy and angular momentum. Thermal physics. Basic properties of waves, simple harmonic motion, superposition principle, interference phenomena and sound. Laboratory Fee. 4 credit hours.

PH 205 Electromagnetism and Optics with Laboratory
Prerequisites: PH 150, M 118 (M 118 may be taken concurrently). Basic concepts of electricity and magnetism; Coulomb's law, electric field and potential, Gauss's law, Ohm's law, Kirchoff's rules, capacitance, magnetic field, Ampere's law, Faraday's law of induction, Maxwell's equations, electromagnetic waves. Fundamentals of optics; light, laws of reflection and refraction, interference and diffraction phenomena, polarization, gratings, lenses and optical instruments. Laboratory Fee. 4 credit hours.

PH 211 Modern Physics
Prerequisite: PH 104 or PH 205. Modern physics fundamentals. Twentieth-century developments in the theory of relativity and the quantum theory. Atomic, nuclear, solid-state and elementary particle physics. 3 credit hours.

PH 270 Thermal Physics
Prerequisite: PH 103 or PH 150. Basic thermodynamics and its applications. Major emphasis on the efficiency of energy conversion and utilization. Topics include: the laws of thermodynamics, entropy, efficiency of heat engines, solar energy, the energy balance of the earth, energy systems of the future, economics of energy use. 3 credit hours.

PH 280 Lasers
Prerequisite: PH 104 or PH 205. Laser theory, holography, construction and application to latest engineering and scientific uses. 3 credit hours.

PH 285 Modern Optics
Prerequisites: PH 104 or PH 205. Introduction to optical theories. Topics on the latest developments in optics. Application to life sciences and engineering. 3 credit hours.

PH 301 Analytical Mechanics
Prerequisites: M 150, M 204, or instructor's consent. Intermediate analytical mechanics. Statics and dynamics of particles and rigid bodies. Emphasis on the theory of motion under central forces and on the use of the generalized coordinates; introduction to an elementary Lagranian and Hamiltonian formalism; small vibrations. 3 credit hours.

PH 351 Intermediate Electricity and Magnetism
Prerequisites: PH 205, M 204. Electric field and potential using vector field formalism. Boundary conditions. Poisson's and Laplace's equations. Electromagnetic fields in cavities and weaveguides. Electromagnetic waves. 3 credit hours.

PH 373 Advanced Laboratory
Prerequisite: PH 211. Selected experiments in atomic, nuclear, and solid state physics. Laboratory Fee. 2 credit hours.

PH 400 Statistical Mechanics
Prerequisite: instructor's consent. An introductory course in classical and quantum tatistical mechanics. The canonical ensemble: Maxwell-Boltzmann, Bose-Einstein, and Fermi-Dirac statistics and their applications; statistical interpretation of thermodynamics; transport processes. 3 credit hours.

PH 401 Atomic Physics
Prerequisite: PH 211. Structure and interactions of atomic systems including Schrodinger's equation, atomic bonding, scattering and mean free path, radiative transitions and laser theory. 3 credit hours.

PH 404 Senior Project
Open to senior physics majors. Individual projects in experimental or theoretical physics to be carried out under direct supervision of a faculty advisor. 1-6 credit hours.

PH 406 Solid-State Physics
Prerequisite: PH 211. Introduction to the physics of solids with emphasis on crystal structure, lattice vibrations, band theory, semiconductor, magnetism and superconductivity. Applications to semiconductor devices and metallurgy. 3 credit hours.

PH 415 Nuclear Physics
Prerequisite: PH 211 or instructor's consent. Elementary nuclear physics. Nuclear structure, natural radioactivity, induced radioactivity nuclear forces and reactions, fission and fusion, reactors and topics of special interest. 3 credit hours.

PH 451 Elementary Quantum Mechanics
Prerequisite: PH 211 or instructor's consent. An elementary treatment of nonrelativistic quantum mechanics. Schrodinger's equation with its applications to atomic and nuclear structure; collision theory; radiation; introductory perturbation theory. 3 credit hours.

PH 470 Theory of Relativity
Prerequisite: PH 211 or instructor's consent. Introduction to Einstein's theory of relativity. Special theory of relativity; Lorentz transformations, relativistic mechanics and electromagnetism. General theory of relativity; equivalence principle, Einstein's three tests, graviton, black hole and cosmology. 3 credit hours.

PH 599 Independent Study
Prerequisites: consent of faculty member and chairman of department. Opportunity for the student under the direction of a faculty member to explore an area of personal interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

Philosophy

PL 201 Philosophical Methods
Logic applied to analyzing and solving practical problems related to the individual and environment, the natural and social sciences, the humanities and the other areas of philosophy. Fall and spring semester. 3 credit hours.

PL 205 Classical Philosophy
The origins of philosophy in the West, and the continuing influence of classical thought on the development of ideas. Fall semester. 3 credit hours.

PL 206 Modern Philosophy: Descartes to the Present
Philosophical theories that have dominated the modern age. Stress on a central figure of the period. Spring semester. 3 credit hours.

PL 210 Logic
Modern symbolic logic and its applications. 3 credit hours.

PL 213-214 Contemporary Issues in Philosophy
Current philosophical thinking on some particular issue in an area such as natural science, social science, metaphysics, religion, aesthetics, ethics, theory of knowledge or language. Fall or spring semester. 3 credit hours each.

PL 222 Ethics in a Changing Society
The major ethical systems in the framework of contemporary society. Ethical norms and their relation to human activities. Fall semester. 3 credit hours.

PL 223 Ethics and Business
How ethics and other values function in their relation to the business enterprise. Spring semester. 3 credit hours.

PL 240 Philosophy of Science and Technology
Scientific method, the logic of scientific explanation, the application of science to practical problems, and questions peculiar to the social sciences. Fall semester. 3 credit hours.

PL 250 Philosophy of Religion
An examination of some philosophical notions used in religious discourse, such as meaning, truth, faith, being, God, the holy. Spring semester. 3 credit hours.

PL 254 Philosophy and Human Relationships
Philosophical questions about human relationships and the nature of the person. Applications to such contemporary issues as: feminism and sexism; love and sexual relationships; marriage and the family; relationships between professionals and clients; barriers of background, race or belief. 3 credit hours.

PL 256 Analysis and Criticism of the Arts
The language used to talk about works of art: form, content, expression, value and the ontological status of the art object. Spring semester. 3 credit hours.

PL 260-261 Religious Intellectual Traditions
Philosophical issues within particular religious commitments. 3 credit hours.

PL 599 Independent Study
Opportunity for the student under the direction of a faculty member to explore an area of interest. This course must be initiated by the student. Fall or spring semester. 1-3 credit hours with a maximum of 12.

COURSES

Political Science

†Institute of Law and Public Affairs courses

PS 101 Introduction to Politics
A basic course for political science majors and for those interested in understanding politics; political components found in man; power, myths, community, obligation, equality, authority, change and justice. 3 credit hours.

PS 121 American Government and Politics
A basic study of the American political system. Constitutional foundations, the political culture, Congress, the Presidency, the judicial system, political parties, interest groups, individual liberties, federalism, the policy-making process. 3 credit hours.

PS 122 State and Local Government and Politics
Problems of cities, revenue sharing, community power structures, welfare, public safety, the state political party, big-city political machines, interest groups, state legislatures, the governor, the mayor, courts and judicial reform. 3 credit hours.

PS 201-202 Women and the Political Process
The impact of women on the economic, social and political process; problems of integration and equalitarianism. 3 credit hours.

PS 203 American Political Thought
Pre-revolutionary and revolutionary political thought; classical conservatism, liberalism, Jacksonian democracy, civil disobedience, social Darwinism, progressive individualism and pluralism. 3 credit hours.

PS 205 The Politics of the Black Movement in America
The political development of the Black movement in America emphasizing ideological, legal and cultural perspectives. 3 credit hours.

PS 216 Urban Government and Politics
A study of the urban political process. Structures and organizations of urban governments, decision making, public policy, the "urban crisis," crime and law enforcement, party politics and elections, taxation and spending patterns, environmental problems, management of urban development. 3 credit hours.

PS 222 United States Foreign Policy
Quantitative and qualitative examination of the foreign policy process; strategy and tactics of a super power in the twentieth century and the determinants of foreign and military policy. 3 credit hours.

†PS 224 Public Attitudes and Public Policy
A study of the sources of mass political attitudes and behavior and their effect upon public policy. The course will examine the techniques for influencing opinion including propaganda and mass media communications. 3 credit hours.

†PS 225 Political Communication
The dynamics of preparing effective public messages. The theory and application of social techniques to political persuasion; talks to win attention, secure action and overcome prejudice. Other topics to be considered are the choice, arrangement and adaptation of materials; audience analysis and motivation. 3 credit hours.

†PS 226 Family Law
A study of legal relations between husband and wife including marriage, annulment, divorce, alimony, separation, adoption, custody arrangements and basic procedures of family law litigation. 3 credit hours.

†PS 228 Legal and Public Interest Groups
This course will examine, through readings and field trips, various institutions in the legal culture. Emphasis on the purpose and function of each organization and on vocational opportunities. Among the institutions to be studied are the private and public interest law firm, administrative agencies, the New Haven Legal Assistance Corporation, the public defender's office, the state and local legislatures and state and federal courts. 3 credit hours.

†PS 229 Legal Communications
This course seeks to familiarize students with the kinds of legal documents and written instruments employed by participants in the legal process. Students will learn to recognize and understand the purpose of writs, complaints, briefs, memoranda, contracts, wills and motions. 3 credit hours.

†PS 230 Anglo-American Jurisprudence
This course will survey ideas about the nature of law. Among the legal philosophers examined will be Plato, Aristotle, St. Thomas Aquinas, John Austin, William Blackstone, Benjamin Cardoza, L.A. Hart and Oliver Wendell Holmes. The contribution to legal theory made by various schools of jurisprudence (e.g., positivism, legal realism) will also be examined. 3 credit hours.

†PS 231 Judicial Behavior
Examination of the American court system as a political policy-making body. Topics considered include: the structure of the judicial system, the influence of sociological and psychological factors on judicial behavior and the nature and impact of the judicial decision-making process. 3 credit hours.

PS 232 The Politics of the First Amendment
Prerequisite: PS 121. Examination of the political implications of the First Amendement freedoms of speech, press and religions; Supreme Court adaptation of the First Amendment to changing political and social conditions. 3 credit hours.

†PS 238 Legal Procedure I
This course is designed to provide a practical knowledge of civil procedure for the pre-law and paralegal student. The student will follow the complete course of a lawsuit, comparing the procedural rules of Connecticut with the Federal Rules of Civil Procedure. Taught from the point of view of a practicing lawyer, pleadings, motions and legal definitions will be introduced and examined for their practical effect on the conduct of a lawsuit. 3 credit hours.

†PS 239 Legal Procedure II
An introduction to litigation techniques and procedures, including skills needed to interview clients, negotiate settlements, take depositions and prepare for trial. Students will learn trial procedures and strategies by participating in a mock trial. 3 credit hours.

†PS 240 Legal Bibliography and Resources
An introduction to legal bibliographic materials. Students will learn how to use various kinds of law books in solving research problems incident to advising clients and trying and appealing cases. The function of court reports, statutes, codes, digests, citators, loose-leaf services and treatises will be discussed. 3 credit hours.

PS 241 International Relations
Forces and structures operating in the modern nation state system; the foreign policy process; decision-making process; the impact of decolonization on traditional interstate behavior; economic and political developments since World War II. 3 credit hours.

PS 243 International Law and Organization
Prerequisite: PS 241. Traditional and modern approach to international law and organization; major emphasis on the contribution of law and organization to the establishment of a world of law and world peace. The League of Nations system and the United Nations system are analyzed. 3 credit hours.

†PS 244 Estates and Trusts
An examination of the legal principles and techniques of effective estate planning and administration. Topics covered include inheritance statutes, preparation and execution of wills, trust and estate accounting and record keeping practices. 3 credit hours.

PS 261 Modern Political Analysis
Introduction to the new approach of political analysis; personality and politics; political socialization; role and group theory; decision making; systems analysis and political violence. 3 credit hours.

PS 264 Political Development of the Third World
Political climate of new states; problems of political unity and national integration, regionalism, nationalism, imperialism; political structures, problems of leadership and decision making. 3 credit hours.

PS 281 Comparative Political Systems: Asia
Traditional and modern political and social structures of China, Japan and Korea and other Asian states including the function of the political system within each country. 3 credit hours.

PS 282 Comparative Political Systems: Europe
Political characteristics of modern European states. Emphasis on political, social and economic institutions, structures, the impact of modern European developments on integration. France, Germany, United Kingdom, USSR, Yugoslavia, Czechoslovakia, Sweden and Switzerland. 3 credit hours.

PS 283 Comparative Political Systems: Latin America
Political modernization, development in Latin America, political institutions, national identity, leadership, integration, political socialization and political ideologies. 3 credit hours.

PS 284 Comparative Political Systems: Africa
Colonial background; constitutional framework. Political institutions and governmental structures of African states. 3 credit hours.

PS 285 Comparative Political Systems: Middle East
Colonial background, legal framework of nationhood; political, social and economic structures of development. Turkey, Egypt, Lebanon, Syria, Jordon, Iraq and Iran. 3 credit hours.

PS 304 Political Parties
Prerequisite: PS 121. Voting and electoral behavior; nominations and campaign strategy; pressure groups; political party structure and functions of the party system in the American political community. 3 credit hours.

PS 308 Legislative Process
Prerequisite: PS 121. Legislative process in the American political system; legislative functions; selection and recruitment of candidates; legislative leadership, the committee system; lobbyists; decision making; legislative norms, folkways and legislative-executive relations. 3 credit hours.

COURSES

PS 309 The American Presidency
The role of the President as commander in chief, legislative leader, party leader, administrator, manager of the economy, director of foreign policy and advocate of social justice; nature of presidential decision making, authority, power, influence and personality. 3 credit hours.

†PS 315 Political Bureaucracy
The nature and function of governmental bureaucratic organizations with particular emphasis on the decision-making process. Attention paid to the sources and consequences of increasing bureaucracy on the ability to govern. 3 credit hours.

†PS 326 Real Estate Law
A variety of legal skills in real estate law. Special attention given to title, operations, mortgage, deeds, leases, property taxes, closing procedures and documents. 3 credit hours.

†PS 328 Legal Management and Administrative Skills
An examination of the procedures and systems necessary to run a law office efficiently. Students will learn such administrative skills as how to interview clients, conduct legal correspondence and maintain legal records. Proven management techniques for keeping track of filing dates and fees, court dockets and calendars are also examined. 3 credit hours.

†PS 329 Legal Library Skills
A systematic appraisal of the duties, responsibilities and skills required of paraprofessionals employed in law libraries. 3 credit hours.

†PS 330 Legal Investigation
Examines skills needed to conduct investigations that are a routine part of the practice of law. How to search a title and how to trace patent rights; principles of fact-gathering in a wide range of cases (e.g., criminal, divorce, custody, housing). 3 credit hours.

PS 331 Political Theory and the Supreme Court
Writings of prominent judicial theorists and political scientists in the area of Supreme Court judicial decision making and judicial review; the political impact of the Supreme Court; the judge as politician; implementation of judicial decisions in the political arena; current cases before the Supreme Court. 3 credit hours.

PS 332 Constitutional Law
Prerequisite: PS 121. Principles and concepts of the United States Constitution as revealed in leading decisions of the Supreme Court and the process of judicial review. 3 credit hours.

PS 390 Political Modernization
Comparative analysis of political change and development. Political transition, political integration and nation building; institutional developments; political parties; military elites, youth, intellectuals, the bureaucracy, economic development and political culture. 3 credit hours.

†PS 406 Public Affairs Research
Students prepare recommendations on policy problems presented to the institute by governmental bodies on the municipal, state and federal levels or by private groups. 3 credit hours.

†PS 415 Internship in Legal and Public Affairs
Students will have the opportunity to work as paraprofessionals in law offices and government agencies, and to share their experiences with other interns in legal and public affairs. Permission of the instructor is required. 3 credit hours.

PS 422 State and Local Legislative Politics
A mock legislative assembly running concurrently with the Connecticut General Assembly and dealing with the same issues. This legislature will hold committee meetings, public hearings, plenary sessions and press coverage using campus media. 3 credit hours.

†PS 430 Computers and the Law
An analysis of the ways in which the advent of the computer has affected law and the legal profession. Students will explore methods of using computers for legal research, the effects of computers on criminology and the administration of justice, the impact of mass data banks on the right to privacy and the freedom of choice. 3 credit hours.

†PS 440 Legal Research
Prerequisite: PS 240. The purpose of this course is to give the student practical experience in researching and writing on realistic legal problems. Specific written assignments will require students to make use of all the library tools. Students will learn how to prepare and analyze legal memoranda and briefs. 3 credit hours.

PS 461 Political Theory: Ancient and Medieval
Prerequisite: HS 111. Foundations of Western political thought: Plato, Aristotle, St. Augustine, St. Thomas Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Mill and Burke. An attempt will be made to apply the political thought of these thinkers to contemporary political questions. 3 credit hours.

PS 462 Political Theory: Modern and Contemporary
Prerequisite: HS 112. Modern and contemporary political theories. Major characteristics of ideology, the psychological and sociological functions of theories, nationalism, the nature of totalitariansim, fascism, Nazism, Marxian theory, communism and democratic theory. 3 credit hours.

PS 494-498 Studies in Political Science
Special studies on a variety of current problems and specialized areas in the field not available on the regular curriculum. 3 credit hours per course.

PS 499-500 Senior Seminar in Political Science
Prerequisite: permission of the department chairman. Construction and preparation of an individual research project in political science by the student and the presentation of that project in oral form within the seminar and in written form as the seminar thesis. Required of all political science majors. 3 credit hours.

PS 599 Independent Study
Directed research on special topics to be decided upon in consultation with the chairman of the department. 3 credit hours.

Quantitative Analysis

QA 118 Business Mathematics
Prerequisite: M109 or Equivalent. This course emphasized mathematical techniques as they apply to managerial decision-making. Topics include: linear functions, systems of linear equations and inequalities, matrix algebra, linear programming, duality and sensitivity analysis. 3 credit hours.

QA 128 Quantitative Techniques in Management
Prerequisite: QA 118. This course places further emphasis on the applications of quantitative techniques to managerial decision-making. Topics include: sequences and limits, differential and integral calculus, and the calculus of several variables with applications to managerial decision-making. 3 credit hours.

QA 216 Probability and Statistics
Prerequisite: QA 128 or equivalent. A course in elementary probability and statistical concepts with emphasis on data analysis and presentation, frequency distributions, probability theory, probability distributions, sampling distributions, statistical inference, hypothesis testing, the T, chi-square and F distributions. 3 credit hours.

QA 250 Quantitative Techniques II
Prerequisites: QA 128 and QA 216. A course stressing advanced applications of quantitative techniques to the solution of business problems. Topics include: classical optimization techniques, non-linear programming, topics in mathematical programming, and graph theory. 3 credit hours.

QA 314 Field Research in Business and Government
Prerequisites: MK 105, QA 216. Methods of determining customer reactions to goods and services offered in the marketplace and to business establishments. Topics include: the nature and role of sampling; characteristics of sampling procedures; design of sample surveys; development of survey designs; procedures used in interviewing, tabulation, data analysis and presentation of research results; and the appraisal of performance to be expected from survey designs. 3 credit hours.

QA 333 Statistics II
Prerequisite: QA 216. A course stressing advanced statistical concepts and statistical methods relating to business. Topics include: regression and correlation, multiple regression, and analysis of variance (ANOVA). 3 credit hours.

Retailing

RT 121 Introduction to Retailing
Prerequisite: MK 105. Introductory survey course of the problems and opportunities in the retail distribution field including a basic understanding of buying, selling and promotion of the retail consumer market. 3 credit hours.

RT 212 Retailing of Textiles
Prerequisite: RT 121. An in-depth study of the technical make-up of fabrics, their design and their application for the future. Emphasis is placed on fabric knowledge as well as problems associated with procurement, distribution and other marketing activities at the retail level. 3 credit hours.

RT 215 Retail Credit Management
Prerequisite: RT 121. An overview of the forces of credit as they apply to stimulating the retailing scene. A philosophical and operational approach to the uses of credit together with the responsibilites and limitations that it imposes on both the grantor and the grantee. 3 credit hours.

RT 218 Retailing of Fashions
Prerequisite: RT 121. The significance of fashion design in both apparel and home furnishings with emphasis on the relationship of the past to the present and to the future possibilities in merchandise. Emphasis is placed on problems associated with procurement, distribution and other marketing activities peculiar to fashion merchandising at the retail level. 3 credit hours.

RT 309 Retail Advertising and Sales Promotion
Prerequisite: RT 121. Intensive review of techniques of retail sales promotion, including newspaper, magazine, radio, television and direct mail. Great emphasis is placed on store imagery and its appropriateness in a variety of marketing situations. Stress is placed on a review of current advertising campaigns by major retail organizations. 3 credit hours.

COURSES

RT 310 Retail Merchandise Management
Prerequisite: RT 121. A total review of the profit and loss aspect of retailing. The fundamentals of achieving total management performance in the retail field. The central course in the retail curriculum, required of every retailing major. 3 credit hours.

RT 313 Retail Buying
Prerequisite: RT 121. Modern technical evaluation of the highly specialized field of purchasing merchandise for resale at the retail level, including study and evaluation of the differing techniques employed by department stores, chain stores, discount stores and independent merchants. A total review of the techniques of merchandise buying in all product categories. 3 credit hours.

RT 599 Independent Study
Prerequisites: RT 121, junior standing. A planned program of individual study under the supervision of a member of the faculty. 3 credit hours.

Russian

RU 101-102 Elementary Russian
Stresses pronunciation, aural and reading comprehension, basic conversation and the fundamental principles of grammar. 6 credit hours.

RU 201-202 Intermediate Russian
Prerequisites: RU 101-102 or the equivalent. Stresses the reading comprehension of modern prose texts and a review of grammar necessary for this reading. Students are encouraged to read in their own areas of interest. 6 credit hours.

Shipbuilding and Marine Technology

SB 101 Introduction to Shipbuilding
Intended primarily for shipbuilding and marine technology students. Relevant to students formally enrolled in other majors but may work in the shipbuilding environment. Introduction to ship construction and shipbuilding practice. Topics include: ship geometry, nomenclature, structural materials, loadings, launching techniques. 3 credit hours.

SB 102 Ship Design
Intended primarily for shipbuilding and marine technology students. Relevant to students formally enrolled in other majors but may work in the shipbuilding environment. Introduction to the general design of various naval vehicles. Topics include a more detailed examination of naval architecture principles (introduced by SB 101) and emphasizing hydrostatics, flotation, trim and stability. 3 credit hours.

SB 201 Nuclear Ship Propulsion Systems
Intended primarily for shipbuilding and marine technology students. Relevant to students formally enrolled in other majors but may work in the shipbuilding environment. Overview of thermodynamic principles, elementary nuclear physics and reactivity, types of nuclear reactors and radiation concerns. Safety emphasized. Cost considerations and comparisons to various power systems for naval vehicles. 3 credit hours.

Science and Environmental Studies

Courses that are marked with an asterisk (*) are usually scheduled every other academic year. Courses marked with a dagger (†) may be offered at the discretion of the department.

SC 111-112 Physical Science
The meaning of scientific concepts and terms and their relation to other areas of learning and to daily living. Development and unity of physical science as a field of knowledge. Includes astronomy, physics, chemistry and geology. 6 credit hours.

†SC 113 Physical Science Laboratory
Prerequisite: SC 111. To be taken with SC 112 or after. Direct experience with physical experimentation. Training in design, conduct, analysis and reporting of physical experiments. Emphasis on historically important theories and experiments. Laboratory Fee. 1 credit hour.

***SC 126 Astronomy**
An introduction to present concepts concerning the nature and evolution of planets, stars, galaxies and other components of the universe. The experimental and observational bases for these concepts are examined. 3 credit hours.

SC 135 Earth Science
A dynamic systems approach to phenomena of geology, oceanography and meterology. Emphasis on interrelations of factors and processes and on importance of subject matter to human affairs. Suitable for nonscience as well as for science majors. 3 credit hours.

***SC 146 Fundamentals of Oceanography**
Description of major aspects of geological, chemical, physical and biological oceanography. Emphasis on human use and disuse of oceans. Suitable for nonscience as well as science majors. 3 credit hours.

***SC 507 Characterization and Treatment of Wastes with Laboratory**

Prerequisites: SC 135, BI 361 or CH 201-202, CH 211; M 117-118. The types of waste materials generated by agriculture, industry, transportation, municipalities and individuals are discussed and the methods of the detection and identification and treatment of each type of waste materials are covered. Laboratory Fee. 4 credit hours.

SC 509 Scientific Photographic Documentation

Prerequisites: BI 121-122 or BI 251-252, consent of the instructor. Theory and practice of photographic image formation and recording. Lecture, demonstration and laboratory experience. Photography and documentation of natural objects, organisms and artifacts of biological, medical, pathological and forensic interests. Photomicroscopic, ultraviolet, infrared, color, and black and white techniques. Laboratory Fee. 4 credit hours, 3 lectures and 1 laboratory per week.

***SC 513 Environmental Pollutants with Laboratory**

Prerequisites: CH 116 and BI 220, or permission of instructor. Physical, chemical and biological properties of the major environmental pollutants. New and older methods of sampling, identification and measurement are presented. Laboratory Fee. 4 credit hours.

Occupational Safety and Health

SH 100 Safety Organization and Management

History and development of safety movement, nature and extent of problem, development of workmen's compensation, development of safety program, cost analysis techniques, locating and defining accident sources, analysis of the human element, employee training, medical service and facilities and the what and how of the Occupational Safety and Health Act. 3 credit hours.

SH 110 Accident Conditions and Controls

Prerequisite: SH 100. Mechanical hazards, machine and equipment guarding, boilers and pressure vessels, structural hazards, materials handling hazards and equipment use, electrical hazards, personal protective equipment. 3 credit hours.

SH 200 Elements of Industrial Hygiene

Prerequisites: PH 103, SH 110, CH 103, or CH 115. Analysis of toxic substances and their effect on the human body. Analysis and effect of chemical hazards, physical hazards of electromagnetic and ionizing radiation, abnormal temperature and pressure, noise, ultrasonic and low-frequency vibration; sampling techniques including detector tubes, particulate sampling, noise measurement and radiation detection; governmental and industrial hygiene standards codes. 3 credit hours.

SH 210 Sound-Hearing-Noise

Prerequisite: SH 200. An analysis of three major factors associated with the noise issue viz, the physics of the nature of sound, the biological phenomenon of hearing, and the engineering processes of noise abatement including a review of the OSHA legal standards for noise exposure. 3 credit hours.

SH 400 Occupational Safety and Health Legal Standards

Prerequisite: SH 100. All aspects of the legal constraints applicable to the occupational safety field are examined. Included are OSHA, federal laws not under OSHA jurisdiction, selected state legislation, current and pending product liability laws, environmental protection law and fire safety codes. Consideration will be made for emphasizing particular legal areas as requested. 3 credit hours.

SH 599 Independent Study

Prerequisites: consent of faculty member and chairman of department. Opportunity for the student under the direction of a faculty member to explore an area of interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

Shipyard Management

SM 410 World Shipbuilding

Analysis of the world merchant fleets and the U.S. merchant fleet. Discussion and analysis of comparative maritime aids. The following countries will be reviewed: Japan, United Kingdom, Norway, Sweden, West Germany, France and the United States. A review also will be made of the Communist countries to the extent that information is available. World shipbuilding competitive factors will be analyzed in this course. 3 credit hours.

SM 412 Shipyard Management: Finance

A study of determinants in forecasting shipyard investment demand. Discussion of comparative efficiency and marine facilities. Private sources of financing and federal subsidies. Cost and benefits from shipbuilding subsidies. Discussion of marine aids available in American shipbuilding. 3 credit hours.

COURSES

SM 414 Shipyard Management: Planning and Control
This course covers planning and control in a commercial shipyard, required by all levels of management to produce quality ships on time. Special emphasis is placed on planning for the use of resources by middle level managers and supervisors. Stress is placed on effective management of time, facilities, materials and manpower. 3 credit hours.

SM 415 Shipyard Management: Marketing
A study of methods to employ when defining future markets that will determine new shipyard production. A study of the relationship between investment, relative productivity and share of the world shipbuilding market. Determination of market share as affected by technical efficiency and cost efficiencies. Emphasis on problems in the dry and liquid bulk sectors of the industry. 3 credit hours.

Sociology

SO 113 Sociology
The role of culture in society, the person and personality; groups and group behavior; institutions; social interaction and social change. 3 credit hours.

SO 114 Contemporary Social Problems
Prerequisite: SO 113. The major problems which confront the present social order, and the methods now in practice or being considered for dealing with these problems. 3 credit hours.

SO 155 Women in Society
An overview of woman's role in the social system. Discussion includes myths and realities of sex differences. Areas covered include analysis of the relationship of women to the economy, the arts, sciences and how these affect the behavior of women in the contemporary world. 3 credit hours.

SO 214 Deviance
Prerequisite: SO 113 or consent of the instructor. (Offered in the spring semester only.) Centered around deviance as a social product. The problematic nature of the stigmatization process is explored in such areas as alcoholism, crime, mental illness and sexual behavior. 3 credit hours.

SO 218 The Community
Prerequisite: SO 113. The community and its provisions for health, education, recreation, safety and welfare. Theoretical concepts of community, plus ethnographic studies of small-scale human communities, introduce students to fundamental concepts of community. 3 credit hours.

SO 220 Physical Anthropology and Archaeology
An introduction to the study of human evolution and of present physical variations among mankind. Includes geologic time, primate evolution and early man and his culture. 3 credit hours.

SO 221 Cultural Anthropology
A systematic study of the culture of preliterate and modern societies and of cultural change. Includes analyses of religion, economics, language, social and political organization and urbanization. 3 credit hours.

SO 231 Juvenile Delinquency
Prerequisites: SO 113, P 111. This course is offered as CJ 221 in university schedules. An analysis of delinquent behavior in American society; examination of the theories and social correlates of delinquency, and the sociolegal processes and apparatus for dealing with juvenile delinquency. 3 credit hours. (Same as CJ 221)

SO 250 Research Methods
Prerequisite: sophomore status. The student develops the concepts necessary for selection and formulation of research problems in social science, research design and techniques, analysis and interpretation of research data. 3 credit hours.

SO 310 Primary Group Interaction
Prerequisite: SO 113. Exploration of communication in group process. Building a group and analyzing group structure and interaction; the ways people communicate emotionally and intellectually. 3 credit hours.

SO 311 Criminology
Prerequisites: P 111, SO 113. An introduction to the principles and concepts of criminology; analysis of the social context of criminal behavior, including a review of criminological theory, the nature and distribution of crime, the sociology of criminal law and the societal reactions to crime and criminals. 3 credit hours. (Same as CJ 311).

SO 312 Marriage and the Family
Prerequisite: SO 113. The formation, functioning and dissolution of relationships in contemporary American society is examined from an applied sociology perspective. 3 credit hours.

SO 313 Sociology of Sport
Prerequisite: SO 113 or consent of the instructor. A study of the relationships among sport, culture and society. Emphasis is on both amateur and professional sports and their impact on the larger social order. Course will examine sport from a comparative and historical perspective, but will also focus on problems confronting the world of sport in contemporary American society. 3 credit hours.

SO 315 Social Change
Prerequisite: SO 113. Sources, patterns and processes of social change with examination of classical and modern theories of major trends and developments as well as studies of perspectives on microlevels of change in modern society. 3 credit hours.

SO 318 Political Sociology
Prerequisite: SO 113. Concepts, theories and basic issues in the sociological analysis of political systems. Social factors in political attitudes and behavior with emphasis on understanding the functional and dysfunctional aspects of socio-political coordination and conflict. 3 credit hours.

SO 320 Social Psychology
Prerequisites: P 111, SO 113. This course is offered as P 321 in university schedules. The interdependence of social organizations and behavior. The interrelationships between role systems and personality; attitude analysis, development and modification; group interaction analysis; social conformity; social class and human behavior. 3 credit hours. (Same as P 321)

SO 321 Social Inequality
Prerequisite: SO 113. Organization of social class: status, power and process of social mobility in contemporary society. Social stratification, its functions and dysfunctions, as it relates to the distribution of opportunity, privilege and power in society. 3 credit hours.

SO 322 Sociology of Education
Effects of education on American society; the organizational structure; major emphasis on the interactive roles of students, teachers and administrators; particular concern with the relationship between education and socio-economic status and problems of organizational change in the American school system. 3 credit hours.

SO 331 Population and Ecology
Prerequisite: SP 113 or permission of the instructor. Societal implications of population changes and trends; impact of man as a social animal upon natural resources; cultural values and social structures, their influence on environmental ethics. 3 credit hours.

SO 333 Sociology of Aging
Prerequisite: SO 113 or consent of the instructor. The sociological phenomenon connected with aging in America. Discussion of the connections between personal troubles and social issues encountered by members of this society as they age. An examination of age stratification and the resultant problems of ageism, prejudice and discrimination. Systematic review of major theoretical framework and research studies; emphasis will be placed on the application of sociological theory and research in the field of aging. 3 credit hours.

SO 337 Human Sexuality
Prerequisite: SO 113 or consent of the instructor. A scientific study of human sexual behavioral patterns, social class attitudes and cultural myths. Topics include reproductive systems, sexual attitudes and behavioral patterns, abortion and sexual laws and variations in sexual functioning. 3 credit hours.

SO 340 Medical Sociology
Prerequisite: SO 113 or consent of the instructor. An analysis of a major social institution, the health care field. Emphasis placed on socio-cultural aspects of the field; general overview of the organization and delivery of health care services and the current problems and issues. 3 credit hours.

SO 390 Sociology of Organizations
Prerequisite: SO 113 or consent of the instructor. Classical sociological theories of organization with emphasis on the concepts of bureaucracy, scientific management, human relations and decision-making theory. The relevance of these ideas to concrete organizational contexts, e.g., civil service, business, social movements and political parties, charitable institutions, hospitals. 3 credit hours.

SO 400 Ethnic Dynamics
Prerequisite: SO 113. An interdisciplinary analysis of minority groups with particular attention paid to those regional, religious and racial factors that influence interaction. Designed to promote an understanding of subgroup culture. 3 credit hours.

SO 410 Urban Sociology
Prerequisite: SO 113. The challenges of the cities. Residential patterns together with the physical development of cities and redevelopment plans. An examination of groups of people and their environment and the relationship between the two. 3 credit hours.

SO 413 Social Theory
Prerequisite: nine semester hours in sociology. An analysis of the development of sociology in the nineteenth and twentieth centuries with particular emphasis on the theories of Comte, Durkheim, Simmel, Weber, Marx, deTocqueville and others. 3 credit hours.

SO 414 Sociology of Occupations and Professions
Prerequisite: SO 113 or consent of the instructor. A sociological analysis of the division of labor, occupational groupings, career patterns and professional associations in modern society. 3 credit hours.

SO 418 Public Opinion and Social Pressure
Prerequisites: SO 113, P 111. An intensive analysis of the nature and development of public opinion with particular consideration of the roles, both actual and potential, of communication and influence. 3 credit hours.

SO 440 Undergraduate Seminar
Prerequisite: consent of the department chairman. A detailed examination of selected topics in the field of sociology and a critical analysis of pertinent theories with emphasis on modern social thought. 3 credit hours.

COURSES

SO 441 Sociology of Death and Suicide
Prerequisite: SO 113 or consent of the instructor. A confrontation with individual mortality and an academic investigation of such phenomena as funerals, terminal illness and crisis intervention, among many others. 3 credit hours.

SO 450 Research Seminar
Prerequisite: P 301 or M 228. The student develops and carries out an original research project in social science, reporting this procedure to the class. 3 credit hours.

SO 451-459 Special Topics: Sociology, Social Welfare, Anthropology
Prerequisite: SO 113, SO 221, or permission of instructor. Special topics in sociology, anthropology or social welfare on a variety of current problems and specialized areas not available in the regular curriculum. 3 credit hours.

SO 501-502 Practicum
Prerequisite: consent of the department chairman. Field experience in sociology or anthropology. Seminars in conjunction with this experience before off-campus field work is undertaken. Contact during the field work experience and guidance by the mentor provide an opportunity for understanding group and individual dynamics and their repercussions. Follow-up seminars and a paper are required. 1-6 credit hours.

SO 599 Independent Study
Prerequisites: consent of instructor and chairman of department. Opportunity for the student, under the direction of a faculty member, to explore an area of personal interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

Spanish

SP 101-102 Elementary Spanish
Stresses pronunciation, aural and reading comprehension, basic conversation and the fundamental principles of grammar. 6 credit hours.

SP 201-202 Intermediate Spanish
Prerequisites: SP 101-102 or equivalent. Stresses the reading comprehension of modern prose texts and a review of grammar necessary for this reading. Students are encouraged to read in their own areas of interest. 6 credit hours.

SP 301-302 Main Currents of Spanish Literature
Prerequisites: SP 201-202 or equivalent. Reading of significant writers of Spanish literature from the Middle Ages to the twentieth century. 6 credit hours.

Social Welfare

SW 220 Introduction to Social Welfare
Prerequisite: SO 113. Introduction to Social Welfare explores two basic questions from a historical perspective: Why are people poor, and, how societies have responded to the conditions of poverty. In examining these questions, the focus is on how the different economic, political, psychological, and sociological arrangements of society, and its social institutions, create conditions which stimulate and necessitate differing social welfare responses. 3 credit hours.

SW 340 Group Dynamics
Prerequisite: Consent of instructor. Group dynamics is designed for students who seek to develop their leadership skills in working with groups of various types. This implies a cognitive and behavioral mastery of a range of complex variables for role effectiveness, including a working knowledge of personal, group and organizational dynamics, professional skills of facilitation, and values of one's professional identity. 3 credit hours.

SW 350 Social Welfare as a Social Institution
Prerequisite: SW 220 or SO 113. The background and context of current social services are presented by a combination of guest speakers and on-site observations. 3 credit hours.

SW 401-402 Field Instruction I and II
Prerequisite: consent of the coordinator of social welfare. Supervised experience relevant to specific aspects of social welfare in human service agencies, institutions and organizations at the local, state and federal levels. Seminars to assist students with the integration of theoretical knowledge and field techniques through lectures and class presentations. Students are required to spend eight hours a week in the field. 6 credit hours.

SW 415-416 Methods of Intervention I and II
Prerequisite: SW 350. Basic social work theory is presented in conjunction with practice skills to help students begin to develop professional techniques for intervention at both the macro and micro levels of practice. 3 credit hours.

SW 475 Issues in Social Work
Prerequisite: Senior status or consent of the coordinator. A seminar to discuss and analyze current issues and changes in social work, social welfare and applied sociology. 3 credit hours.

SW 599 Independent Study
Prerequisite: Consent of the particular faculty member involved and the coordinator. Designed to permit students to pursue specific areas of interest which may not be available in the curriculum. 1-3 credit hours.

Theatre Arts

T 131 Introduction to the Theatre
Play analysis from a literary standpoint and as it relates to special problems of the actor, director, designers and backstage personnel. Practical work in all phases within the classroom. Fall semester. 3 credit hours.

T 132 Introduction to Production Styles
Study of dramatic genres and theatrical conventions through script and critical reading, as well as practical work in class. Spring semester. 3 credit hours.

T 141 World Drama and Theatre
Dramatic literature in theatrical contexts from Greek origins through the French neoclassicists. 3 credit hours.

T 142 World Drama and Theatre II
Dramatic literature in theatrical contexts from the English Restoration through the present. 3 credit hours.

T 341 Acting
Development of acting skills for the stage through games, improvisation and scene study. 3 credit hours.

T 342 Directing
Prerequisite: consent of instructor. Fundamentals of directing; staging techniques; working with actors; direction of a one-act play for workshop presentation. 3 credit hours.

T 491-492 Performing Arts Seminar
Prerequisite: consent of the instructor. Special areas of the performing arts: drama, film, dance, radio, television. Criticism, writing, directing, performing, design. 6 credit hours.

T 599 Independent Study
Opportunity for the student under the direction of a faculty member to explore an area of interest. This course must be initiated by the student. 1-3 credit hours per semester with a maximum of 12.

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Mrs. William F. Robinson, Sr., title IV consultant, State Department of Education
Fenmore R. Seton, president, Seton Name Plate Corporation
Franklin B. Sherwood, professor, University of New Haven

At left, University of New Haven President Phillip Kaplan presents an honorary doctor of laws degree to former U.S. undersecretary of state Eugene V. Rostow.

Leon J. Talalay
Anthony Terrasi, day student, University of New Haven
George R. Tiernan, secretary; attorney at law
Robert M. Totton, field underwriter, New York Life Insurance Company
Marjorie Turkoff, evening student, University of New Haven
Cheever Tyler, attorney at law
P. Takis Veliotis, vice president-marine and international, General Dynamics Corporation
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Robert C. Zampano, U.S. district judge

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Dalen A. Bowles, assistant to the president and to the chairman of the board
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Marcia Longyear, executive secretary
Janet Seymour, financial secretary

Office of the Director of University Operations

John E. Benevento, B.S., M.S., director
Helen Rothfuss, executive secretary
Eva Widger, executive secretary

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James T. Anderson, B.A., M.S., assistant director
Lesa Loritts, B.A., assistant director
Jane Collier, B.A., counselor
Mary Ann Mikosky, B.S., M.P.A., counselor
Evelyn Sherwood, executive secretary
Beatrice Cordone, secretary
Nancy DeMartino, secretary-receptionist
Celia DiNello, secretary
Lorraine Guidone, secretary
Adele Olivi, secretary

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Mary Boeger, admission secretary
Jane Joseph, secretary-receptionist
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Alumni Relations

Patricia A. Ahern, B.S., director
Mary S. Morris, secretary
Sara Haddad, secretary
Lois Ucas, secretary/word processor

Athletics

William M. Leete, M.Ed., director
Deborah Chin, M.S.P.E., associate director
Robert Deobil, B.S., trainer
Peter Vander Veer, B.S., sports information director
Leo Paquette, equipment manager
Thomas H. Bell, M.A., head coach, football
Deborah Chin, M.S.P.E., head coach, volleyball
Robert Deobil, B.S., head coach, track
Stuart Grove, 6th Year Certificate, head coach, men's basketball
Linda Hamm, M.S., head coach, women's basketball
Stephen Lane, B.A., head coach, hockey
Chris Liebowitz, head coach, women's tennis
John Maher, M.S., head coach, soccer
John Maloney, B.S., head coach, cross country
Judy Samaha, M.S., head coach, softball
Paul Scordato, B.S., head coach, lacrosse
Frank Vieira, M.S., head coach, baseball
Donald Wynschenk, M.S., head coach, tennis
Margaret Candido, secretary
Barbara McGill, secretary

Business Office

Marjorie C. Deobil, B.S., director of the business office, assistant secretary
Frank M. Clifford, B.S., M.B.A., bursar
Lorraine G. Bevins, B.S., accounting supervisor
Ola Beamon, accounts clerk
Shirley Berkun, accounts payable clerk
Mary Lou D'Addio, accounts clerk
Mary DeRosa, accounting clerk
Lois Earles, payroll clerk
Frances MacMillan, senior accounts clerk

Frances Tomczyk, accounting clerk
Mary P. Traggis, accounts clerk
*__Helene Fillmore,__ accounts clerk

Career Development

Charles A. Bove, B.A., M.A., director
Bonnie Mercilliott, secretary

Computer Center

Edward T. George, B.S., M.S., D. Engr., director
Richard Bassett, Jr., B.S., programmer/analyst
Thomas Clarino, systems programmer
Jeffrey Hook, systems programmer
Susan Hung, B.A., M.S., systems analyst programmer
Cynthia Kranyik, B.A., M.S., director of academic systems and faculty liaison
Raymond Pulaski, B.S., M.S., manager of computer operations and on-premise C.E.
Salvatore Votto, Jr., B.S., director of administrative hardware systems and telecommunications
Mark Weber, B.S., director of administrative software systems
Roberta C. Peccerillo, secretary

Counseling

George H. Davis, B.A., M.S., Ph.D., director
Deborah Everhart, B.A., M.A., Ph.D., assistant director
Ann Massini, secretary

Equal Opportunity

Wilda S. Hamerman, B.A., M.S., director

Handicapped Service

George A. Schaefer, B.S., M.B.A., coordinator
Beatrice Cordone, secretary

Health Service

Jon Fessel, M.D., university physician
Patricia A. Garrett, R.N., F.N.P., head university nurse
Paula Cappuccia, R.N., university nurse

Housing

Gary M. Reho, B.S., M.Ed., dormitory director

International Student Affairs

Robert J. Chudy, A.A., B.A., M.A., director
Anne B. Callahan, secretary

Library

Samuel M. Baker, Jr., B.A., B.S., M.A., university librarian
Alice Pidgeon, B.S., M.S., assistant head, technical services
Eric Johnson, B.S., M.L.S., M.S., associate librarian for public services
Carol M. Harker, B.A., M.L.S., head, reference/documents
Linda Senkus, B.S., M.S., reference librarian
Mark Gudsnuk, B.A., B.S., audiovisual assistant
Patricia Taylor, administrative assistant, coordinator of circulation and reserves
Edith Lissey, executive secretary
Lorraine Burke, library clerk
Barbara B. Caine, library clerk
Carol Ginter, library clerk
Lillian Goldsmith, library clerk
Annette Greenhouse, library clerk
Marie Keenan, library clerk
Mary Jane King, library clerk

Elizabeth Kuchinski, library clerk
Kathleen Lee, library clerk
Christena Leo, library clerk
Marie Miller, library clerk
*__Marsha Brennan,__ library clerk
*__Maryann Dineen,__ library clerk
*__Eloise Gormley,__ library clerk
*__Ann Grelle,__ library clerk
*__Anna Hohl,__ library clerk
*__Joanna Krol,__ library clerk
*__Joyce McVey,__ library clerk
*__Sybil Merritt,__ library clerk
*__Doree Roberts,__ library clerk

Minority Student Affairs

Melba Lee-Hanna, B.S., M.Ed., coordinator and assistant to the dean of student affairs and services
Dorothy I. Levitsky, executive secretary

Personnel

Edward Mennona, B.S., M.P.A., director
Georgianne DeMaio, personnel management specialist
*__Carol Riordan,__ receptionist/clerk

Public Relations

Ann Martindale, B.A., M.A., director
Elizabeth T. Bennett, B.A., associate director
Martha Callaway, B.A., director of the news bureau
Jacqueline L. Church, B.A., M.A., director of publications
Celia Lenkiewicz, secretary

Purchasing, Buildings and Grounds

John E. Benevento, B.S., M.S., director
Helen Rothfuss, executive secretary
Eva Widger, executive secretary
Harry Florentino, supervisor of maintenance
Michel Jean-Pierre, assistant supervisor of custodians
Donald Wright, assistant supervisor of maintenance
Anthony Ortiz, receiving and inventory clerk
*__Anastasia Avgerinos,__ administrative aide
*__Maureen Chase,__ central duplicating service
*__Abraham M. Kaplan,__ assistant receiving clerk
*__Mary Yurczyk,__ central duplicating service

Radio Station

Rose Majestic, A.S., B.S., M.Ed., general manager
*__Albert Smith,__ chief engineer

Resident Services

John H. Schaetzl, A.B., director

Security

Donald R. Scott, director
Richard D. Baker, assistant to the director
Eldridge L. Hatcher, security supervisor
Arcadio Rodriguez, security supervisor
Arthur P. Sheehan, supervisor
John A. Amato, security officer
Dorothy L. Kyles, dispatcher
Linda K. Simoni, security officer
Michael Simoni, guard dispatcher
Oscar J. Stanely, security officer
Ronald D. Whittaby, security officer
Rosemarie Giannotti, secretary
*__Theodore Kastancuk,__ guard dispatcher
*__Leonard Smith,__ guard/dispatcher

Services

Polly MacDiarmid, console attendant
Stephanie Magliola, console attendant
Ralph Palmieri, mail clerk
Angelo Rosadini, university postmaster
***Elizabeth Albertoli,** receptionist/secretary
***Dolores Board,** console attendant
***Cathryn Martin,** console attendant
***Irene Perry,** receptionist/secretary
***Earl Walker,** mail clerk

Scheduling

Patricia A. Hudson, A.S., B.S., director
Celia DiNello, secretary

Student Affairs and Services

Thomas B. Robinson, B.A., M.Ed., Ed.D., dean
John H. Schaetzl, A.B., assistant dean
Dorothy I. Levitsky, executive secretary
***Anne Callahan,** secretary

Student Center

Rebecca D. Johnson, B.A., M.A., director

Student Records

Joseph Macionus, M.P.A., registrar
Nancy A. Carroll, M.S., assistant registrar for undergraduate records
Frank A. S. Elliott, B.S., assistant registrar for systems operations
Virginia Klump, assistant registrar for graduate records
Ann Chernick, transcript credit analyst
Audrey Kushner, data communications specialist
Ellen Leuzzi, administrative secretary
Marjorie Manfreda, recorder, graduate records
Doris Perry, records assistant
***Mary Burdick,** recorder, undergraduate records
***Annabelle D'Amicis,** records assistant

Title XX

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Veterans' Affairs

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School of Arts and Sciences

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Kee W. Chun, A.B., A.M., Ph.D., chairman, physics
John Collinson, A.B., A.M., Ph.D., acting chairman, humanities
Caroline A. Dinegar, B.A., M.A., Ph.D., chairman, political science
Judith B. Gordon, B.A., M.A., Ph.D., chairman, sociology and social welfare
Jean Henry, B.A., M.A., Ph.D., chairman, art
Dennis L. Kalma, B.A., M.S., Ph.D., chairman, biology
Paul Marx, B.A., M.F.A., Ph.D., chairman, english
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John J. Teluk, B.A., B.S., M.A., chairman, economics
George L. Wheeler, B.A., Ph.D., chairman, chemistry and engineering chemistry
W. Thurmon Whitley, B.S., M.A., Ph.D., chairman, mathematics
Donald Wynschenk, B.S., M.S., chairman, physical education
Nancyanne Rabianski, B.A., M.S., Ph.D., director, learning assistance center

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Louise Allen, faculty secretary
Ann Andrus, faculty secretary
Beverly Blanchard, faculty secretary
Margaret Candido, faculty secretary
Genevieve Lysak, executive secretary
Valerie Moore, faculty secretary
Lucy Wendland, faculty secretary
*__Barbara Tomaso,__ faculty secretary

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Arvin Rodriques, M.S., Ph.D., chairman, marketing
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Lois Anderson, faculty secretary
Yolanda Costanzo, faculty secretary
Judy Grammatico, faculty secretary
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Marlene Wajnowski, faculty secretary

Division of Criminal Justice

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Maria DeLise, faculty secretary
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Florence Poppendick, registration secretary
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Frederick Mercilliott, A.A.S., B.S., M.P.A., D.A., director, fire science
Steven M. Songer, B.S., coordinator, aviation
Richard H. Strauss, B.S., M.P.A., director, aviation
Abdul H. Qazi, B.S., M.S., Ph.D., director, M.S. program in OSH management
Jessie Delahanty, secretary

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Muriel C. MacKay, B.S., director
Cristina G. Behling, conference coordinator
Claire Cappiello, secretary
*__Cornelia Mas__, secretary

Cooperative Education Program

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Jessie Delahanty, secretary

U.N.H. in Southeastern Connecticut

Robert L. DeMichiell, B.S., M.S., Ph.D., director
Christian F. Poulson, B.A., M.A., M.B.A., M.Phil., director, resource management
Baldev K. Sachdeva, B.S., M.A., Ph.D., director, academic affairs
Richard H. Strauss, B.A., M.P.A., director, administrative operations
Judith A. Murphy, administrative secretary
Ann S. Chipkin, secretary
*__Barbara M. Troadec__, B.A., coordinator, Quonset Point operations

Graduate School

Gwendolyn E. Jensen, B.A., M.A., Ph.D., dean
David Paelet, B.S., M.S., Ph.D., associate dean
D. Jeanne Martin, executive secretary
Linda Carlone, secretary
*__Mary Ann Gargon__, receptionist for the university at Danbury

Graduate Admission

John O'Brien, B.S., M.B.A., director of graduate admissions
Elaine Lewis, B.A., M.A., associate director of graduate admissions
Mary Boeger, secretary to the director
Jane Joseph, secretary-receptionist
Rosemary Platz, admissions secretary

Executive Master of Business Administration Program

John B. Moore, Ph.D., associate dean, director
Joseph J. Gamba, assistant director
Concetta DeChello, secretary

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Faculty

Faculty Organization

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Faculty/Student Relations	Nancyanne Rabianski
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Instruction	Donald M. Smith
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Board of Faculty Welfare

Chairman	Gerald J. Kirwin
Secretary-Treasurer	Joseph M. Gangler
Grievance Officer	Joseph M. Gangler

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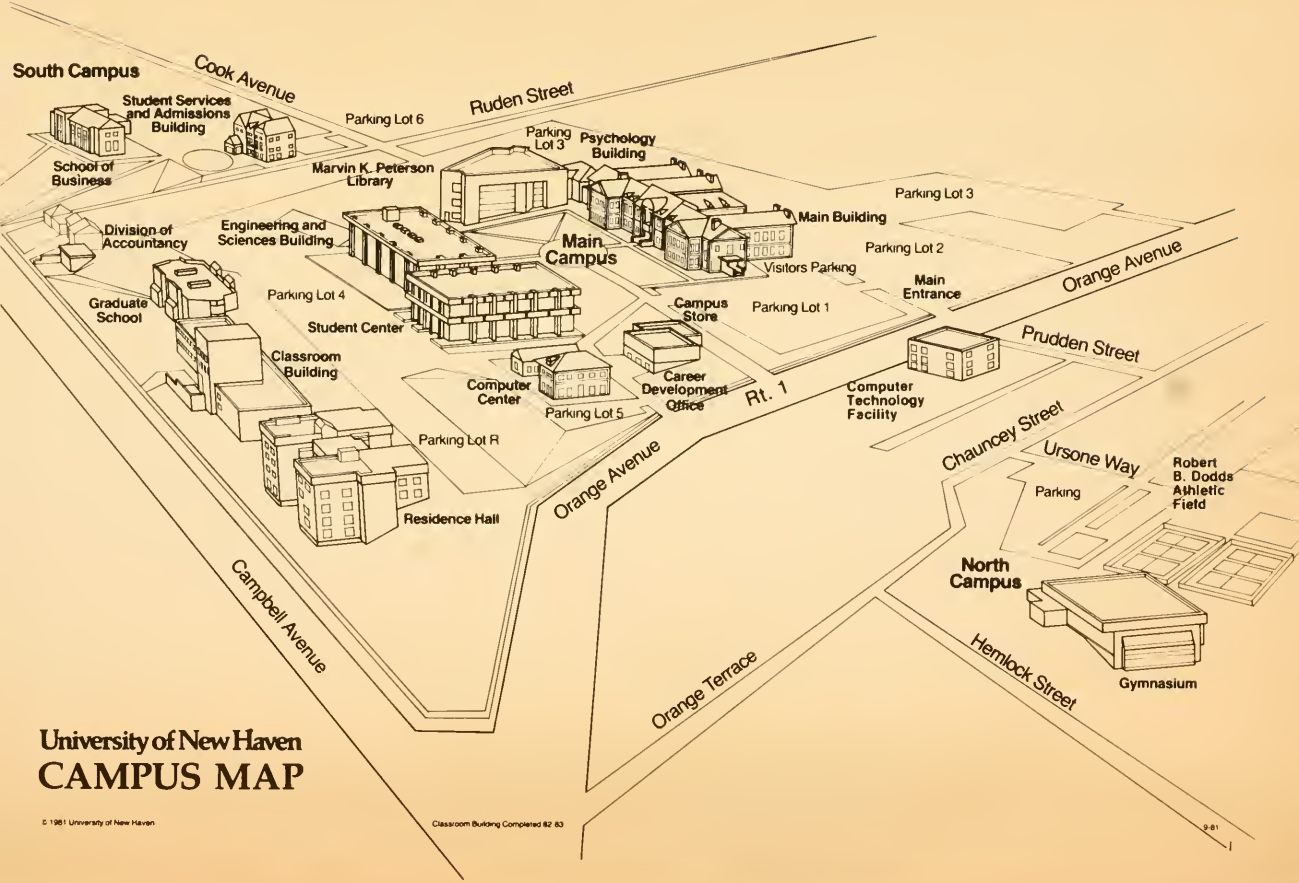

University of New Haven
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Classroom Building Completed 82 83

9-81

University of New Haven

Please Print or Type.
Complete both sides.

Undergraduate application for admission

Instructions for applicants:

1. Action on this application can be taken ONLY after the university has received ALL of the below:
   - A completed application form and NONREFUNDABLE application fee.
   - Official academic transcripts from all educational institutions previously attended including high school. The student is responsible for arranging the forwarding of academic transcripts to the university.
   - Admission test scores.
2. Please mail to University of New Haven, West Haven, CT 06516. Please note on envelope: ATTN: Day Admission, ATTN: Evening Admission or ATTN: UNH in Southeastern Connecticut.
3. **Financial aid applicants must contact the financial aid office for information.**
4. Contact the office of residence services if interested in housing.
5. If you have any questions, please call (203) 934-6321, Day Admission, x 211, Evening Admission, x 225 or UNH in Southeastern Connecticut at (203) 446-2082.

A

I am applying for:

☐ Day Division ($15 application fee)
☐ Evening Division ($10 application fee)
☐ UNH in Southeastern CT ($10 application fee)
☐ Summer Session ($5 application fee)

Name _____ Social Security #☐☐☐-☐☐-☐☐☐☐
Last First M.I.

Address _____
Street Apt # City State Zip

Telephone # ( ) _____ Male ☐ Female ☐

Country of Citizenship _____ Birth place _____ Birthdate _____

Under what other name could your records be listed? _____

Have you previously applied ☐ or attended ☐ the University of New Haven? When _____

When do you want to enroll?

Semester ☐ Fall 19 ____ ☐ Spring 19 ____ ☐ Summer 19 ____ session _____

Trimester (UNH in Southeastern CT only): ☐ Fall 19 ____ ☐ Winter 19 ____ Spring 19 ____

Do you plan to study: ☐ Full-time ☐ Part-time (number of courses: _____)

How did you learn about UNH? ☐ Radio ☐ Newspaper Ad ☐ TV Commercial ☐ Direct Mail
☐ Friend ☐ School Guide ☐ Guidance counselor ☐ College Fair ☐ Other _____

B

High Schools and Colleges attended	Location (city & state)	Course of study or major/degree	Dates attended	Year expected to grad.

Note: Failure to list all colleges previously attended constitutes grounds for dismissal.

C

Choice for satisfying the admission test (Check one): ☐ American College Testing Program
☐ CEEB Scholastic Aptitude Test ☐ University of New Haven tests (taken at university)

D

Work experience: List employers and dates worked. (Last job first)

_____

_____

E

Military service: Branch _____ Rank _____ Dates of service _____

F

Emergency Name _____ Address _____ Telephone # _____

G Majors and Degrees Offered

Circle the number of the program for which you are applying. Those students registering for a four-year Arts and Sciences program but are not sure of their major may circle 102; Business Administration students may circle 220, and Engineering, 350. Registrants in these schools must decide on their major within two years.

Concentrations (conc.) and **Career Minors** are also noted.

Arts & Sciences

	A.S.	B.A.	B.S.
Applied Mathematics			
Computer Science (conc.)			197
▲Natural Science (conc.)			195
Art		121	
Biological Illustration		193	
Biology	108	109	171
Chemistry		153	
Communication		191	
Economics		117	
▲English		113	
Environmental Studies	134		177
Fashion Design (Art)	130	139	
General Studies	102		
Graphic & Advertising Design	104	105	
History		115	
Interior Design (Art)	132	140	
Journalism	106		
Mathematics		157	
▲Microbiology			179
Philosophy		159	
Photography	112		
Physics		155	175
Political Science		111	
Psychology		119	
Social Welfare		189	
Sociology		167	
▲World Music		161	

Key:
AS—Associate in Science degree
BA—Bachelor of Arts degree
BS—Bachelor of Science degree

Business Administration

	A.S.	B.S.
Accounting		
Financial Accounting		215
Managerial Accounting		217
Insurance (career minor)		277
Real Estate (career minor)		279
Air Transportation Management		289
Business Administration	220	221
Business Data Processing		273
Business Economics		241
Communication	260	261
Criminal Justice		
Administration	254	255
Corrections	256	257
Forensic Science		253
Law Enforcement Science		293
Security Management		291
Dietetic Technology	204	
Executive Housekeeping Administration	202	
Finance		251
General Dietetics		205
Hotel Management	238	237
Institutional Food Service Administration		239
International Business		219
Management Science		259
†Shipyard Management (career minor)		275
Marketing		229
Operations Management		249
Personnel Management		267
Public Administration		231
Retailing	264	265
Tourism and Travel	232	233

Engineering

	A.S.	B.S.
Chemistry	372	373
Civil Engineering		377
Computer Technology		355
Electrical Engineering		359
Engineering	350	
Industrial Engineering		363
Materials Technology		369
Mechanical Engineering		361

Professional Studies and Continuing Education

	A.S.	B.S.
Aeronautical Technology	452	
Arson Investigation		443
Fire & Occupational Safety	448	
Fire Science		
Administration		445
Technology		447
Occupational Safety & Health	450	451
†Shipbuilding & Marine Technology		
†Shipbuilding (conc.)	402	
†Engineering (conc.)	404	
†Management (conc.)	406	

Non Degree

Personal Enrichment	890

Certificate Programs 890

specify name of program

▲ not offered in the Evening Division
† only offered in Southeastern Connecticut

H For Foreign Students Only

Present visa status: F-1 ☐ B-2 ☐ J-1 ☐ Other ☐ Do you need the I-20 form? Yes ☐ No ☐

Foreign students are not eligible for F-1 visa unless full-time (12 semester hours).

TOEFL or SAT is required for admission. TOEFL score of 500 is acceptable.

Please note that only U.S. citizens and eligible non-citizens qualify for financial aid.

Optional: The University of New Haven seeks to draw students from all racial and ethnic groups in our society. For that reason, please indicate in what group you would include yourself _____
(Whether or not you answer this question will have no effect on your application for admission.)

I Certificate To Be Signed By Applicant and Parent, Guardian, or Sponsor of Minors*

The information supplied on this application is complete and true to the best of my knowledge. All materials and supporting records submitted by me or on my behalf in connection with this application or my attendance will not be released to anyone other than authorized university personnel without my consent (or parents' consent if a minor applicant).

It is understood that incorrect or falsified information will be grounds for disapproval of this application or dismissal from the university. The undersigned agree(s) to pay all financial obligations if admitted to and attending the university, including obligations incurred if financial aid is terminated, reduced or postponed for any reason.

The undersigned also authorize(s) the Office of Public Relations of the university to publish the applicant's picture, address, major, honors, sports or other activities for public relations purposes should the applicant decide to attend the university in any capacity. This publicity authorization may be rescinded by notifying the Office of Public Relations in writing within 30 calendar days of admission to the university.

Applicant's Signature _____ Date _____

* If the applicant is under 18, the applicant and a parent or guardian should sign.

Parent or Guardian's Signature _____ Date _____

The University of New Haven does not discriminate in admission or employment on the basis of sex, race, religion, age, national origin, or physical handicap. An equal opportunity affirmative action institution.

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University of New Haven

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Undergraduate application for financial aid

If you would like to apply for financial aid, please read the instructions below and complete the application on the reverse of this page. Please note that *only* U.S. citizens and eligible non-citizens qualify.

A Complete the College Scholarship Service's Financial Aid Form (FAF), Side I and II, available at any high school or college. Return it to CSS after January 1, and request that they send a copy of the report to the University of New Haven (code number 3663). Returning students must send the FAF to CSS by April 1; new students by May 1. UNH will consider late applications only if funds remain available.

B On your FAF, indicate that you are applying for a Pell (Basic) Grant. You must apply for this program when you apply for financial aid at UNH. You will receive three copies of your Student Eligibility Report from the Pell Program office. Submit all three copies of your report to the UNH financial aid office, whether or not you are eligible for a Pell award. If you are applying to other universities, we will accept a photocopy of your report to determine the amount of your award on a preliminary basis. All transfer students must submit a financial aid transcript from all institutions previously attended, even if you received no aid. Forms are available at the UNH financial aid office.

C UNH will not consider incomplete applications; be sure to complete these steps. We cannot determine your award without all of the required information. The Financial Aid Committee will review your application and notify you regarding your eligibility. If you are eligible, we will send you an award offer, which details the type, amount, terms and conditions of your award.

D To remain eligible for financial aid at UNH, you must be in good academic standing. You must also make satisfactory progress toward your degree; full-time students must complete a minimum of 12 credit hours per semester. The Financial Aid Committee will review your academic records; your financial aid may cease if you fail to meet these requirements.

E Please return this completed application to:

Director of Financial Aid
University of New Haven
300 Orange Avenue
West Haven, CT 06516

The University of New Haven does not discriminate in admission, financial aid or employment on the basis of age, race, sex, religion, natural origin or handicap.

University of New Haven

Undergraduate application for financial aid

Please Print or Type

Permanent home address

Name (Last, first and middle)

Street

City State Zip

Permanent phone number

Local address while attending UNH

Street

City State Zip

Local phone number at UNH

Social Security Number ☐☐☐-☐☐-☐☐☐☐

When did you send your Financial Aid Form (FAF) to the College Scholarship Service with the Pell (Basic) Grant assistance request:

Date

Please check appropriate boxes.

I am a:
- ☐ new student ☐ transfer student
- ☐ current UNH student ☐ commuting student
- ☐ resident student

I plan to enroll in:
- ☐ Day Division ☐ Graduate School
- ☐ Evening Division ☐ UNH in Southeastern Connecticut

I am applying for financial aid for:
- ☐ Fall 19____ ☐ Spring 19____
- ☐ Academic year 19____ – 19____
- ☐ Other _____

I plan to attend UNH:
- ☐ full-time ☐ part-time # courses ____
- major: _____

Anticipated Expenses

Tuition and Fees	$_____
Books/Supplies	_____
Board (Food)	_____
Room (Rent)	_____
Transportation	_____
Personal	_____
Other (attach information)	_____
Total Expenses	$_____
Minus Total Resources (from right)	–$_____
Financial Aid Applied For, (Expenses minus resources)	$_____

Anticipated Student Resources

From Parents and Relatives	$_____
From Student Savings	_____
From Summer Earnings	_____
From Part-time Employment	_____
V.A. Benefits	_____
Social Security or other Government Assistance	_____
Other (attach information)	_____
Total Resources	$_____

Please list any other sources of financial aid you have applied for or received.

_____

_____

_____

_____

Are you available for student employment? yes ☐ no ☐

I hereby make application for financial aid as indicated above. The information given herein is true and correct to the best of my knowledge.

I have read the conditions applying to eligibility for financial aid on the reverse side of this form.

Date Signature

Do not write below this line.

ACTION BY FINANCIAL AID COMMITTEE

QPR/CEEB _____
Cr. Hrs. _____
Rank _____
Need Verified _____
Acc. _____
Pd. _____
Reg. _____
Citizen _____

	Fall	Spring	Total
Pell			
AS			
GIA			
SEOG			
Other			
GILP			
NDSL			
CWS			
Bursary			

☐ Approved ☐ Denied – reason for denial _____

Name Date Covering Period

Revised 10/81

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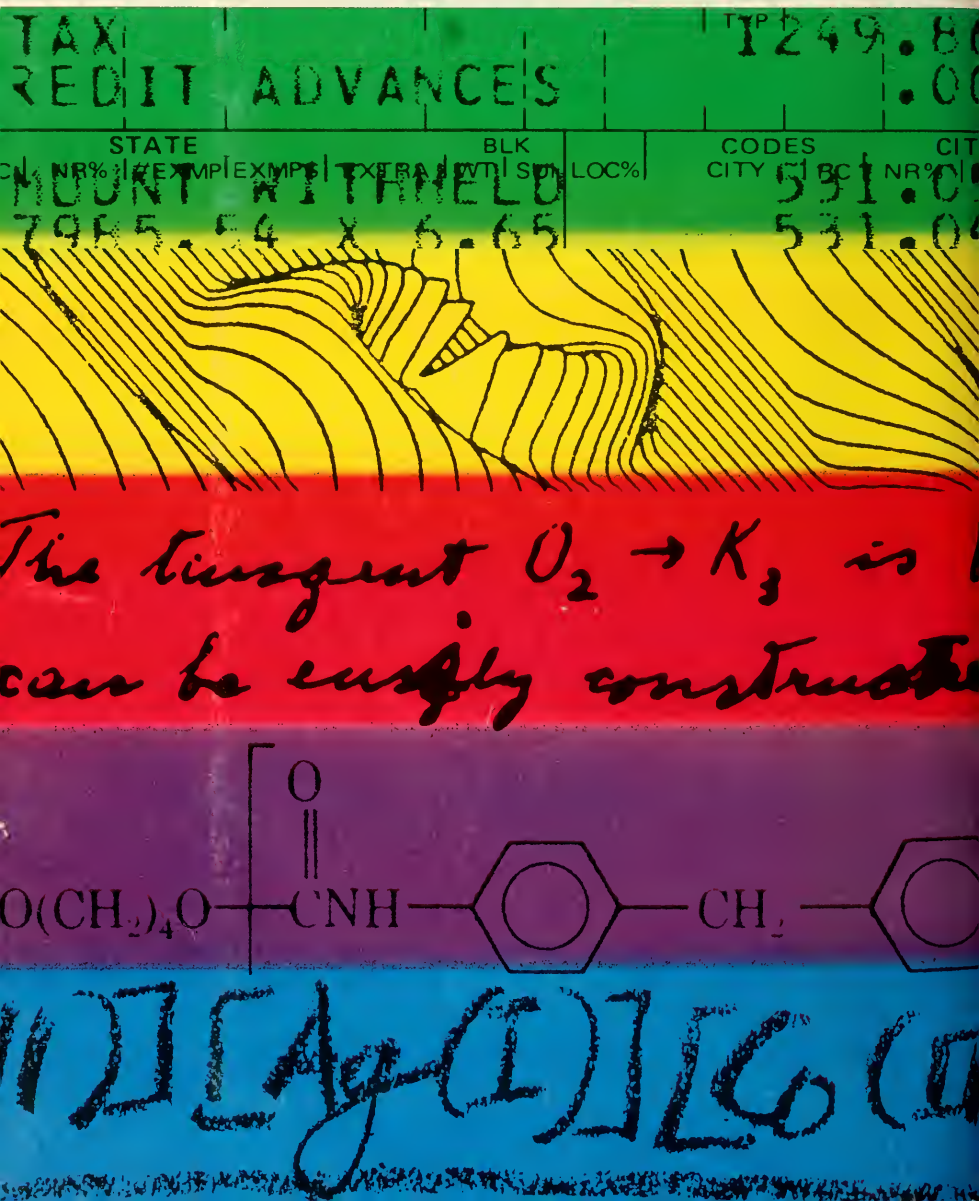
February 1982

Second Class
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New Haven, CT